

**ASSESSING THE IMPACT OF RELIGIOUS BELIEFS ON PUBLIC  
PERCEPTIONS AND U.S. GOVERNMENT POLICIES: THE CASE OF  
EMBRYONIC STEM CELL RESEARCH**

A Dissertation

by

TOMEKA MICHELLE ROBINSON

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2009

Major Subject: Health Education

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Approved by:

Chair of Committee,	Patricia Goodson
Committee Members,	E. Lisako J. McKyer
	Buzz Pruitt
	Domonic Bearfield
Head of Department,	Richard Kreider

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## **ABSTRACT**

Assessing the Impact of Religious Beliefs on Public Perceptions and U.S. Government

Policies: The Case of Embryonic Stem Cell Research. (December 2009)

Tomeka Michelle Robinson, B.S., McNeese State University;

M.A., Texas A&M University

Chair of Advisory Committee: Dr. Patricia Goodson

This dissertation presents three separate studies designed to provide structure and evidence-based insight into the impact of religious beliefs on public perceptions and U.S. government policies regarding embryonic stem cell research. First, a systematic literature review of nine (n=9) empirical studies that examined individuals' religious beliefs and perceptions/utilization of genetic technologies/services will be presented. Based on the finding from the review, there was an equal balance between studies that found that religion was a factor positively affecting intention to submit to genetic testing and those that illustrated a negative association.

Secondly, a qualitative examination of college students' from various racial/ethnic and religious backgrounds exploring the definition, interpretation, and conceptualization of the influence of religious beliefs on perceptions regarding embryonic stem cell research will be offered. Employing an emergent design, the data collection process encompassed thirty-seven in-depth interviews. The majority of participants in this study believed that ESCR should be conducted and federally funding in the United States, regardless of their religious beliefs.

Lastly, the findings from the analysis of congressional records from the U.S. Congress for areas of convergence and divergence between discussions, voting, and legislation regarding stem cell research with the official stances of the major religious groups in the United States accessing the influence of religious rhetoric on political discourse regarding embryonic stem cell research will be discussed. Findings from this study suggest that religious rhetoric has a substantial influence on political rhetoric regarding ESCR.

## **DEDICATION**

To my mother and niece for their unfaltering love and support

## **ACKNOWLEDGEMENTS**

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## CHAPTER I

### INTRODUCTION

Within the arena of biotechnology, the newest and most controversial issue is embryonic stem cell research (ESCR). When President Bush announced to the American people in August 2001 that he would not allow federal research grants to be awarded to scientists conducting human ESCR, the debate became public (Korobkin and Munzer, 2008). This announcement coupled with media coverage of political discussions surrounding ESCR has left few in contemporary society without some knowledge of the words ‘stem cell’ (Brossard and Shanahan, 2003). However, many individuals have merely a vague understanding of the terms to which they have been exposed.

There are two basic kinds of stem cells: those found in certain adult tissues and those found in the cells of three-to-five-day-old embryos. The major difference between adult and embryonic stem cells is their ability to differentiate into multiple cell types. “Embryonic stem cells are derived from totipotent cells of the early mammalian embryo and are capable of unlimited, undifferentiated proliferation in vitro” (Thomson, Itskovitz-Eldor, Shapiro, Waknitz, Swiergiel, Marshall, and Jones, 1998; p.1145). In other words, embryonic stem cells can become all cell types because they have the ability to develop into any of the 220 cell types in the human body. Adult stem cells are thought to be limited to differentiating only into cell types that match their tissue of origin (Smith, 1991).

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This dissertation follows the style of *Health Education*.

The increasing interest in ESCR from a scientific perspective is three-fold. First, through the examination of the mechanisms by which stem cells differentiate to repair the body's structures, scientists are enabled to gain more insight into how diseases generate and develop. Second, if scientists can figure out ways to manipulate stem cells to imitate disease formation, they can devise treatments. Third, stem cells can potentially cure diseases directly (Korobkin and Munzer, 2008).

While scientists and bioethicists alike tout the promising aspects of ESCR, not everyone is as enthusiastic. The potential benefits of the science have presented many, including some religious groups in the US, with a number of non-trivial ethical concerns. Therefore, the purpose of this study is to answer the overarching research question: *how do religious beliefs influence people's perceptions of, and institutional (government and/or other) policies regulating embryonic stem cell research?*

The current document is separated into five distinct chapters. It should be noted that Chapters II-IV were written as self-contained manuscripts to be submitted for publication in peer-reviewed journals. Below is a description of each of the chapters:

- Chapter I: General overview and rationale for the project.
- Chapter II: A systematic literature review of the current body of literature regarding religion-related factors and intention to submit to genetic testing.
- Chapter III: Qualitative findings from interviews with college students from various racial/ethnic and religious backgrounds exploring the definition, interpretation, and conceptualization of the influence of their religious beliefs on their perceptions regarding embryonic stem cell research.

- Chapter IV: Report of the analysis of congressional records from the U.S. Congress for areas of convergence and divergence between discussions, voting, and legislation regarding stem cell research with the official stances of the major religious groups in the United States.
- Chapter V: Elaboration of the meanings and lessons learned from the three studies (Chapters 2 – 4). In addition, implications for health education, health promotion, and public health, as well as future research needs will also be assessed. Appendices including documentation will follow this chapter.

## **CHAPTER II**

### **SYSTEMATIC LITERATURE REVIEW OF CURRENT RESEARCH**

### **EXAMINING RELIGION-RELATED FACTORS AND GENETIC TESTING**

#### **INTRODUCTION**

Albert Einstein once quipped “Science without religion is lame, religion without science is blind.” However, it is undeniable that throughout history there has been a constant tension between religion and science. From astronomy to biology, scientists have consistently faced opposition from religious leaders and groups. In response to recent advances in biomedical science and technology, particularly genetic testing, this tension has regained its vitality (Durst, 2002). Prenatal genetic testing, disease susceptibility testing, diagnostic screening, and newborn screening have all become commonplace within modern medicine. Therefore, at some point many will be faced with decisions about whether to submit to various genetic tests (White, 2006).

Genetic tests look for alterations in an organism’s genes or changes in the level of key proteins coded for by specific genes. There are several types of genetic tests: gene tests, chromosomal tests, and biochemical tests (National Human Genome Research Institute, 2009). Additionally, according to the National Institute of Medicine Genetics Home Reference (2009),

Genetic testing is a type of medical test that identifies changes in chromosomes, genes, or proteins. Most of the time, testing is used to find changes that are associated with inherited disorders. The results of a genetic test can confirm or

rule out a suspected genetic condition or help determine a person's chance of developing or passing on a genetic disorder (p. 1).

In other words, for humans, genetic tests can be used to detect possible genetic diseases in unborn babies, to determine if a person carries a gene for a disease that he/she might pass on to a child, to test for genetic diseases in adults before they have symptoms, and to confirm a diagnosis in a person who already exhibits symptoms.

People have different reasons for testing or inversely not being tested. For many, it is important to know whether a disease can be prevented. However, participation in genetic testing is a complex decision that involves knowledge about genetics and a number of personal, ethical, and religious concerns (Honda, 2003; Peters and Armstrong, 2004). Genetic counselors can help individuals and families think about the health-related, emotional, and ethical factors that affect testing decisions. However, for some individuals, the values intrinsically tied to their religious beliefs cannot be easily negotiated with the help of genetic counselors.

Sociologist Solomon (2006) describes religion as a mode of being in the world that provides an avenue for transcendent meaning, and provides categories for understanding major events in people's lives. Additionally, religion can be a critical part of one's identity. Religious faith is central to many individuals' day-to-day functioning (Harris, Keeley, Barrientos, Gronnvoll, Landau, Groscurth, Shen, Cheng, and Cisneros, 2009). Therefore, spiritual and religious identities often provide a guideline for decision-making processes, including decisions regarding exposure to and use of genetic technology (Getz, 1984; Clark and Dawson, 1996).

Previous studies have shown that religion can be influential in certain kinds of testing decisions (Schwartz, Hughes, Roth, Main, Peshkin, Isaacs, Kavanagh, and Lerman, 2000), in coping with stress raised by genetic information (Keenan, Lesniak, Guarnaccia, Althaus, Ethington, and Blum, 2004), and in the attitudes of genetic professionals (Poppelaars, Ader, Cornel, Henneman, Hermens, Wal, and Kate, 2004). However, to date there has not been an attempt to systematically review the state of current research concerning the relationship between religious beliefs and intention to submit to genetic testing. Therefore, the purpose of this study is to fill this gap by systematically reviewing research concerning this relationship by examining and organizing findings from available studies. The specific research question guiding this review is: *do religion-related factors influence the intentions of individuals to seek genetic testing?* For the purposes of this review, genetic testing includes prenatal genetic testing, diagnostic screening, and disease susceptibility testing. Religion-related factors include religious beliefs, identity, practice and affiliation.

## **METHODS**

The choice to conduct a systematic review as opposed to a traditional literature review was purposeful. Systematic reviews utilize a replicable, scientific, and transparent process that minimizes bias through literature searches of published and unpublished studies (Tranfield, Denyer, and Smart, 2003). In other words, systematic literature reviews (SLR) identify key scientific contributions to a field through the examination and organization of findings from the literature. Additionally, systematic

literature reviews provide an audit trail of the reviewers' decisions, procedures, and conclusions (Cook, Mulrow, and Haynes, 1997).

Therefore, using Garrard's (2004) Matrix Method, the electronic databases Cambridge Scientific Abstracts (CSA), EBSCO HOST (Academic Search Premiere) and ISI Web of Knowledge were utilized to explore research-based articles associated with religion and genetic testing. The academic fields of Health (Health Sciences: SAGE and Medline), and Psychology (PsycArticles, Psych INFO, and Psychology: SAGE) were explored to identify research-based articles. Several variations and Boolean connections of the key terms *religion*, *religious beliefs*, and *genetic testing* were employed.

Using the search terms, 192 documents were obtained. In order to be included in the study articles had to: (a) be published in a peer-reviewed, English language journal; and (b) empirically examine individuals' religious beliefs and perceptions/utilization of genetic technologies/services. Findings from the studies were defined as discussions of religious beliefs, religious identity, religious practice, or religious affiliation and its subsequent effect on intention to submit to genetic testing. Papers were excluded if they were commentaries, theoretical, or didn't include measures of religious beliefs in relation to intention to undergo genetic testing. There were no time limits and neither was there any restrictions placed on age, race/ethnicity, religion or other demographic characteristics of the studies' samples.

Nine reports — out of the pool of 192 documents originally obtained and examined — met the inclusion/exclusion criteria above, and were integrated in this review. The 9 studies were written in English, published in peer-reviewed journals, and



empirically analyzed the influence of religion on intentions to undergo genetic testing either directly (as the focal relationship in a study) or indirectly (as a non-focal relationship). A review matrix was created to structure information abstracted from each study (Garrard, 2004). Table 2.1 is an abridged version of the original matrix.

Alongside systematically abstracting information from each of the studies, the reports were also rated according to their methodological quality. The rating was determined by using the set of criteria developed by Berstein and Freeman (1975). The design of these criteria is based on assumptions that value quantitative, controlled studies, over qualitative studies. The criteria address use of theory, definitions provided, quality of research design, and quality of data analysis. For instance, studies that included either a conceptual definition or an operational definition of any of the religion-related factors (beliefs, identity, etc) received a score of 1; if the study provided both a conceptual and operational definition, the study received a score of 2; however, if the study did not provide either a conceptual or an operational definition, the study received a score of 0. Assessment of these methodological characteristics led to the assignment of an overall methodological quality score (MQS) to each study (Garrard, 2004). Table 2.2 presents the criteria used to judge each study's methodological quality. The highest possible MQS was 9. A score of 9 indicates the study presented a theoretical framework, both a conceptual and operational definition of religion-related factors, implemented both quantitative and qualitative methodologies, and used multivariate statistical analysis for the quantitative data.

**Table 2.1. Characteristics of Reviewed Studies**

Reference	Journal	Year	Theory	Conc. Def.	Oper. Def.	Religious Measures	Sample Size	Research Paradigm	Purpose	Data Analysis	Finding	MQS Score
Bowen et al. (2003)	Cultural Diversity and Ethnic Minority Psychology	2003	No	Yes	Yes	Religiosity scale (religious orthodoxy, public religious observance, and private religious observance)	221 Ashkenazi Jewish Women	Quantitative	Explore the connections between two dimensions of Jewish identity and interest in the 3 screening behaviors: mammography, breast self-exam, and genetic testing	Bivariate correlations were conducted to assess the relationship between the scales and the measures of intention. Multiple regression was conducted to identity screening intentions.	Neither cultural or religious identity significantly predicted intentions to perform breast self exams. Religious identity was a significant positive predictor in intentions to follow recommendations for mammograms. Both religious identity and cultural identity significantly predicted interest in genetic testing, but in opposite directions. Increasing levels of cultural identity were related to increased interest in genetic testing, whereas religious identity was inversely related to interest in genetic testing.	6
Kastrinos et al. (2007)	American Journal of Gastroenterology	2007	No	No	No	Participants were asked about their religious affiliation (if any) and the impact of religion on their overall decision making	34 unrelated individuals affected with familial adenomatous polyposis	Quantitative	Explore reproductive decision making in patients with FAP and to evaluate attitudes of affected individuals toward different forms of prenatal diagnosis, including amniocentesis, CVS, and PGD	Frequency distribution analyses	All participants felt that it was ethical to provide any form of prenatal testing for FAP and four of five subjects reporting "strong" religious background said they would consider prenatal testing.	3

**Table 2.1. Continued**

Reference	Journal	Year	Theory	Conc. Def.	Oper. Def.	Religious Measures	Sample Size	Research Paradigm	Purpose	Data Analysis	Finding	MQS Score
Learman et al. (2003)	American Journal of Medical Genetics	2003	No	No	No	Seven-point Likert scales to measure participants' endorsement of the influences of faith/religion on decision making	1,084 pregnant women	Quantitative	Explore attitudes toward testing and the role of external influences in a diverse population of pregnant women to better understand the social and familial context of prenatal testing decision-making	Continuous variables were compared using t-tests and Wilcoxon tests and categorical variables were compared using chi-square tests	There was little endorsement by any group of the statement that faith/religion influenced their prenatal genetic testing decisions, and there was a statistical trend that Caucasian women were the least likely to agree with such a statement	3
Mitmann et al. (2007)	Journal of Patient Education and Counseling	2007	No	No	Yes	Questions were asked about religious practices	33 Orthodox Jews	Qualitative	Investigate the misconceptions that exist between the Orthodox Jewish community and the medical community with relation to genetic services	Textual analysis	One issue identified was the religious identity of the counselor and counselee. Additionally, genetic counselors felt uncomfortable asking questions about religious practices even as they related to offered interventions.	3

**Table 2.1. Continued**

Reference	Journal	Year	Theory	Conc. Def.	Oper. Def.	Religious Measures	Sample Size	Research Paradigm	Purpose	Data Analysis	Finding	MQS Score
Remnick (2006)	Sociology of Health & Illness	2006	No	No	Yes	Questions were asked to access religiosity	25 women	Qualitative	Explore the driving forces behind the upsurge in elective prenatal screening for genetic conditions among Israeli Jewish women as these emerged from women's own accounts	Content analysis	Women seeking elective tests were on average less religious, more educated, and employed full time, carrying their first child, and more often belonging to the Ashkenazi Jewry. Non-testers were usually more religious, pregnant with their second or third child, less educated, more often homemakers or working part-time, and of non-European ethnic origin	3
Schwartz et al. (2007)	Cancer Epidemiology, Biomarkers, & Prevention	2007	No	No	Yes	Spirituality was assessed with the following item "How strong would you say your religious or spiritual faith is?"	290 adult breast cancer patients	Quantitative	Explore the role of spirituality in testing decisions	Chi square analysis	Spiritual faith and perceived risk for ovarian cancer were significantly associated with test use. The final odds ratios revealed that highly spiritual women were 80% less likely to receive test results compared with less spiritual women. The statistically significant spirituality by breast cancer perceived risk interaction revealed that among women with high perceived risk for breast cancer, spirituality was unrelated to receipt of test results, however, among women with low perceived risk, those with high spirituality were 80% less likely to receive test results	4

**Table 2.1. Continued**

Reference	Journal	Year	Theory	Conc. Def.	Oper. Def.	Religious Measures	Sample Size	Research Paradigm	Purpose	Data Analysis	Finding	MQS Score
Singer et al. (2005)	International Journal of Public Opinion	2005	No	No	No	Demographic questions assessed religious affiliation	Data from 4 national surveys	Quantitative	Explore attitudes toward genetic testing	Logistic regression	On all four surveys, nonwhite respondents and Jewish respondents were significantly more likely to opt for prenatal testing. On the 2 GSS omnibus surveys, Catholics were significantly less likely to do so. On the two stand-alone surveys, Jewish individuals or those professing no religion were significantly more likely to opt for abortion upon discovering fetal defect. Catholics were significantly less likely.	4
Thomas et al. (2007)	Haemophilia	2007	No	No	No	Questions were asked to assess religious beliefs	39 participants	Qualitative	Explore the attitudes and beliefs of the haemophilia community towards genetic testing and genetic counseling and to explore social and ethical implications of testing for the community	Content analysis	Religious beliefs influenced participants' attitudes to undergo prenatal genetic diagnosis. Those who identified themselves as Catholic expressed their aversion to unnatural approaches to conception instead leaving it in God's hands.	2

**Table 2.1. Continued**

Reference	Journal	Year	Theory	Conc. Def.	Oper. Def.	Religious Measures	Sample Size	Research Paradigm	Purpose	Data Analysis	Finding	MQS Score
Zimmerman et al. (2006)	Journal of the National Medical Association	2006	Theory of Reasoned Action	No	No	Questions were asked about religious beliefs and the importance of religion in their lives	248 participants	Quantitative	Identify racial differences in beliefs about the causes of diseases whose etiology is environmental, genetic, or a combination, and to explore racial differences in beliefs about genetic testing, ethical and religious values and concerns about discrimination	Bivariate associations were testing using Chi-squared tests. Logistic regression analysis was performed to determine variables associated with race	African-Americans were more likely than Caucasians to agree that genetic testing led to racial discrimination. Similarly, African-Americans were more likely to agree that research on genetic testing was tampering with nature and thereby unethical, and more likely to agree that all pregnant women should have genetic tests. Although African Americans were less likely to identify themselves as Christian/Catholic/Orthodox, African Americans remained more likely to believe that God's Word was their most important source for moral decisions.	5

**Table 2.2. Criteria for Assessment of Reviewed Studies Methodological Characteristics**

Methodological Characteristic	Scoring Options (Maximum total score=9 points)
Theoretical framework presented	No theoretical framework=0 points Presented a theoretical framework=1 point
Definition of Religion or Religious Beliefs	No definition=0 points Conceptual/Operational definition=1 point Both conceptual and operational definitions=2 points
Research Paradigm	Quantitative paradigm/quantitative paradigm=1 point Mixed methods=2 point
Data analysis (statistical techniques employed)	Qualitative analyses (content analysis; emergent themes analysis; grounded theory)=1 point Univariate statistics/descriptive= 1 point Bivariate statistics/ANOVA=2 points Multiple/logistic regression=3 points Multivariate statistics (canonical correlation; discriminant function analysis; path analysis; structural equation modeling)=4 points

## FINDINGS

The specific research question guiding this review was: *do religion-related factors influence the intentions of individuals to submit to genetic testing?* To answer this question, we identified nine studies meeting our proposed inclusion/exclusion criteria. The studies were carried out in the United States (n=7), Israel (n=1), and

Australia (n=1) and were published between 2003 and 2007. The studies were published in journals from various disciplines including psychology, medicine, and sociology.

### ***Religion-Related Factors Associated with Intention to Obtain Genetic Tests***

While all nine studies identified some religion-related factor associated with intention to submit to genetic tests, the factors were significantly varied. Table 2.3 summarizes all factors encountered in the reviewed studies.

**Table 2.3. Summary of Religion-Related Factors on Intention to Submit to Genetic Testing**

<i>Religion-Related Factors</i>	<i>Authors</i>
<i>Religious Beliefs</i>	Thomas et al. (2007) Zimmerman et al. (2006) Schwartz et al. (2007) Learman et al. (2003) Kastrinos et al. (2007)
<i>Religious Identity</i>	Bowen et al. (2003) Mitmann et al. (2007)
<i>Religious Practice</i>	Remennick (2006)
<i>Religious Affiliation</i>	Singer et al. (2005)

### ***Religious Beliefs as a Factor***

Five of the nine studies employed scales or questions that assessed the influence of religious beliefs on testing intentions (Table 3). Of the five studies, four utilized quantitative methods. The scales employed in the quantitative studies included importance of religious beliefs in daily life (Zimmerman, Tabbarah, Norwalk, Raymond, Jewell, Wilson, and Ricci, 2006), strength of religious and spiritual faith (Schwartz et al., 2007), and influence of faith/religion on decision making (Learman, Kuppermann, Gates, Nease, Gildengorin, and Washington, 2003; Kastrinos, Stoffel, Balmana, and



Syngal, 2007). The findings of each study and their subsequent relationship with the research question will be discussed in more detail below.

Zimmerman et al. (2006) attempted to identify racial differences between Caucasian and African-American patients regarding beliefs about genetic testing. Additionally, the researchers were interested in accessing the ethical and religious values that may have some impact on these patients' testing decisions. In their study, 248 participants from four inner-city health centers were surveyed. They found that while African-Americans were less likely to identify a religious denomination, they were more likely to believe that God's Word was their most important source for all decisions, including those related to health. The findings from this study suggest that when faced with health decisions, including genetic tests, some individuals believe that God's word is the most important influence on decisions.

Schwartz et al. (2000) analyzed the role of spirituality in testing decisions through a quantitative study with 290 adult breast cancer patients. The researchers found that women with strong religious beliefs were 80% less likely to submit to tests compared to those with weaker religious beliefs. Researchers dichotomized responses to the item "how strong would you say your religious or spiritual faith is" into "strong" and "not very strong/a little strong/moderately strong". However, a statistically significant spirituality-by- perceived-risk interaction revealed that, among women with high-perceived risk for breast cancer, religious beliefs were unrelated to whether patients submitted to genetic tests. Findings from this study suggest that when there is perceived risk involved, religious beliefs do not stop patients from submitting to genetic tests.

Learman et al. (2003) explored attitudes towards testing and the role of external influences in a diverse population of pregnant women in order to better understand the social and familial context of prenatal testing decision-making. The researchers surveyed 1,084 pregnant women from African-American, Asian, Mexican American, or Caucasian racial/ethnic backgrounds. In their study, they found there was little endorsement by any group of the statement that faith/religion influenced their decisions. However, there was a statistical trend suggesting Caucasian women were the least likely group to agree with the statement. Findings from this study suggest there may be an underlying racial/ethnic influence that supersedes that of religious beliefs.

Kastrinos et al. (2007) explored the reproductive decision making processes of patients with familial adenomatous polyposis (FAP): “FAP is one of the most important clinical hereditary forms of inherited susceptibility to colorectal cancer and is characterized by a high degree of phenotypic heterogeneity” (Quaresima, Crugliano, Gaspari, Faniello, Cosimo, Valanzano, Genuardi, Cannataro, Veltri, Baudi, Doldo, Cuda, Venuta, and Costanzo, 2008; p. 40). More specifically, the researchers analyzed the attitudes of affected individuals toward different forms of prenatal diagnosis, including amniocentesis, chorionic villous sampling, and preimplantation genetic diagnosis. A total of 34 individuals were surveyed in this pilot study. Researchers found that all participants felt that it was ethical to provide prenatal testing for FAP and four out of five participants reporting strong religious backgrounds said they would consider prenatal testing. Findings from this study imply that, for certain diseases, religion is not a strong factor affecting intention to submit to prenatal genetic tests.

One study employing qualitative methods examines the effects of religious beliefs on intention to submit to genetic tests (Thomas, Herbert, Street, Barnes, Boal, and Komesaroff, 2007). For this study, the researchers interviewed 39 members of the hemophilia community residing in Victoria, Australia. Through their analysis, they found that religious beliefs had both positive and negative effects on attitudes toward prenatal genetic diagnosis. For instance, when the researchers questioned participants about their feelings regarding pre-implantation genetic diagnosis (PGD), those that were Catholic viewed this test as being an “unnatural approach to conception” (Thomas et al., 2007, p. 637). Another with equally as strong religious beliefs believed that PGD gave them the power to stop the gene from being passed on to his child (Thomas et al., 2007). Findings from this study suggest that religious beliefs do influence behavior, but it is not always easy to predict whether it will be a positive or negative effect.

### ***Religious Identity as a Factor***

While some researchers view religious identity as affiliation with a particular religious group or denomination, (Hertel, 1988; Sprika, Hood, and Gorsuch, 1985), others have operationalized the term as attendance at services (Dillion, 1996) and priority of religion relative to other life roles (Wimberely, 1989). In this review, the operational definition of religious identity as priority of religion in one’s life (Wimberely, 1989) will be adopted.

Two of the nine studies documented religious identity as a factor associated with intention to submit to genetic tests (Bowen, Singal, Eng, Crystal, and Burke, 2003; Mittman, Bowie, and Maman, 2007). Bowen et al. (2003) explored the connections

between two dimensions of Jewish identity and interest in three screening behaviors: mammography, breast self exam, and genetic testing for breast cancer. The dimensions explored were religious identity (involvement with synagogue and other forms of worship) and cultural identity (involvement with nonreligious Jewish activities). From the Ashkenazi Jewish population of the greater Seattle, Washington area, 221 women participated in the study. The researchers found that neither cultural nor religious identity significantly predicted intentions to perform breast self exams. Religious identity was a significant positive factor associated with intention to follow recommendations for mammograms. And both religious and cultural identities were significant negative factors associated with interest in genetic testing.

Mittman et al. (2007) qualitatively investigated some of the misconceptions members of the Orthodox Jewish community have about genetic services. To answer their research question, the researchers interviewed a non-probability, purposeful sample of 33 Orthodox Jews. The researchers found that misconceptions about the nature and logistics of genetic services by participants had more of an impact on reluctance to submit to genetic tests than did religious beliefs. Findings from this study suggest that knowledge about genetic testing and genetic testing procedures, not religious beliefs, is the stronger factor affecting intention to submit to genetic testing.

### ***Religious Practice as a Factor***

Religious practices such as religious observance, prayer, and church attendance were identified in one of the studies as a factor associated with intention to submit to genetic testing (Remennick, 2006). Remennick (2006) qualitatively examined the

psychosocial mechanisms that drive some Israeli women to submit to genetic testing. The researcher cites statistics from Sher, Romano-Zelekha, Green, and Shohat (2003) and Zlotogora and Leventhal (2000) who found that 51% of pregnant Israeli Jewish women reported having undergone amniocentesis or some other genetic test. Therefore, Remennick wanted to understand this phenomenon. Through in-depth interviews with 37 pregnant Israeli women (in Israel), the researcher found that those seeking elective tests were less religious, more educated, employed full time, carrying their first child, and were Ashkenazi. Those opting against screening were usually more religious, pregnant with their second or third child, less educated, and were of non-European ethnic origin.

### ***Religious Affiliation as a Factor***

One study specifically identified religious affiliation as a factor of intention (Singer, Van Hoewyk, and Antonucci, 2005). In the study conducted by Singer, Van Hoewyk and Antonucci (2005), the researchers explored attitudes towards genetic testing according to religious affiliation by analyzing data from four national surveys in the United States. Based on the logistic regression analyses conducted, they found that on all four surveys, Jewish respondents were significantly more likely to opt for prenatal tests. On the two stand-alone phone surveys, Catholics were significantly less likely to do so, and on the other two surveys Jewish individuals or those professing no religion were significantly more likely to opt for abortion upon discovering fetal defects. Additionally, findings from the phone surveys found that Catholics were the least likely to explore the option of abortion even with positive results for fetal defects. Findings

from this study suggest that religious affiliation is a factor affecting intention to submit to genetic testing.

### ***Methodological Quality***

Table 1 displays each study's methodological quality score, out of a possible maximum score of 9. Given the bias inherent in the criteria, the lowest ranking studies were those that used qualitative methodologies. The methodological quality scores for the studies ranged from 2-6, with an average quality rating of 3.66 (SD=1.22). Of the nine studies, six studies were quantitative and three were qualitative. Three studies implemented bivariate statistical analyses (Bowen et al., 2003; Learman et al., 2003; Schwartz et al., 2007), two studies, logistic regression analyses (Singer et al., 2005; Zimmerman et al., 2006), three studies, qualitative analyses (Mitmann et al., 2007; Remennick, 2006; Thomas et al., 2007), and one utilized frequency distribution analysis (Kastrionos et al., 2007). Of the nine studies, only one discussed a theoretical foundation (Theory of Reasoned Action) (Zimmerman et al., 2006). None of the reviewed studies provided just a conceptual definition of the religion-related variables measured. However, Bowen et al. (2003) provided both conceptual and operational definitions. Three of the nine studies defined religion-related variables operationally only (Mitmann et al., 2007; Remenick, 2006; Schwartz et al., 2007). The remaining articles did not provide either types (Kastrinos et al., 2007; Learman et al., 2003; Singer et al., 2005; Thomas et al., 2007; Zimmerman et al., 2006).

## DISCUSSION

Based on the findings in this review, there is an equal balance between studies that found that religion was a factor positively affecting intention to submit to genetic testing (Bowen et al., 2003; Kastrinos et al., 2007; Learman et al., 2007; Zimmerman et al., 2006) and those that illustrated a negative association (Mittmann et al., 2007; Remenick, 2006; Schwartz et al., 2006; Singer et al., 2005; Thomas et al., 2007).

While Judaism is not the largest religious denomination, three of the nine studies (Bowen et al., 2003; Mitmann et al., 2007; Remenick, 2006) focused exclusively on the Jewish faith. Ostrer (2001) cites the ease of founder mutations, relative simplicity of gene patterns, and the willingness of Jewish individuals to participate in genetic research as the reason for the narrow focus on Judaism. This concentration on Judaism exclusively severely limits the discussion of the influence of religion-related factors on intention to submit to genetic testing. Therefore, more research is needed that analyzes the influence of religious beliefs on intention to submit to genetic testing from multiple religious perspectives.

While there are studies that address the correlation between religion and genetic decision-making from a theoretical point of view, the small sample of available studies that meet the inclusion/exclusion criteria suggests the need for more empirical research. Pierret and Friedrichsen (2009), Keenan, Lesniak, Guarnaccia, Althaus, Ethington, and Blum (2004), and a number of other researchers have also called for more studies that analyze the relationship between religious beliefs and genetic decision-making. By

strengthening the body of literature in this area, a better understanding of the decision-making processes of individuals that are guided by religious doctrine is afforded.

Examination of these studies' quality scores reveals that this body of literature is composed mainly of quantitative studies employing bivariate statistical analysis only, without the use of theory or definitional standards. Findings from this review suggest that more research is needed that implements theory and clear definitions of religion and religious beliefs either operationally or conceptually.

This review's main strength lies in organizing the available empirical data concerning the influence of religion on intention to submit to genetic testing. However, a major weakness is that while all of the studies assessed religion and genetic testing, intention to seek genetic testing was not the primary focus for the majority of the studies. Most studies focused more generally on attitudes toward genetic screening.

Another limitation of this study is found in the clear bias in favor of quantitative methods in the evaluation criteria used in the review. While qualitative data can provide richer descriptions of respondents' views and identify issues that are relevant to the research question, only three of the nine articles meeting the inclusion/exclusion criteria utilized qualitative methods. Therefore, the quality ratings reflected the sample of articles being reviewed. Findings from this study suggest it is paramount that future research on religion-related factors associated with intention to submit to genetic testing pay attention to the quality of the study's design and measures, as well as strive to use valid methods and collect reliable data utilizing rigorous quantitative, qualitative, or mixed-methods approaches.



### **CHAPTER III**

## **RELIGIOUS AND GENOMICS/GENETICS BELIEFS: AN EXPLORATORY STUDY**

### **INTRODUCTION**

Adult stem cells have been used for many years in the treatment of patients, but no controversy about the ethical aspects of a new biotechnology has been as intense as the debate surrounding embryonic stem cell research (ESCR) (Durst, 2002). With media discourse covering the issue from ethical, moral, religious, and political perspectives, few individuals within contemporary society have not heard the words *stem cell*. However, the lay public often misunderstands the complexities surrounding research on human stem cells.

According to veterinarian Lisa Fortier (2005), “stem cells are generically defined as undifferentiated cells that are capable of self-renewal through replication as well as differentiation into specific cell lineages” (p. 415). In other words, stem cells have the ability to renew or regenerate and to develop into many different cell types in the body. There are two basic kinds of stem cells: those found in certain adult tissues and those found in the cells of three-to-five-day-old embryos. The major difference between adult and embryonic stem cells is their ability to differentiate into multiple cell types. Embryonic stem cells can become all cell types of the body because they are pluripotent (they have the ability to develop into any of the 220 cell types in the human body). Adult

stem cells are thought to be limited to differentiating only into cell types that match their tissue of origin (Smith, 1991).

From the perspective of people with degenerative, chronic and debilitating illnesses, the potential for cure and treatment offered by embryonic stem cells is worth potential concomitant risks. According to the Pew Forum on Religion and Politics (2009):

... for patients and their families, embryonic stem cell research offers the hope of cures for chronic and debilitating conditions, such as juvenile diabetes, Alzheimer's disease, Parkinson's disease, spinal cord injuries and blindness. For scientists, it [embryonic stem cell research] represents a revolutionary path to discovering the causes and cures for many more human maladies (p.1)

Additionally, according to Eve Herold, a bioethicist of the Genetics Policy Institute (2006),

... human embryonic stem cells have already been used to create dopamine-producing neurons (the cells that are lost to Parkinson's disease) and motor neurons, the cells that could cure ALS or reverse paralysis in a stroke victim ...

Human stem cells have also given rise in the lab to living retinal cells—some of the body's most precious cells for their sight-giving ability. Scientists at Harvard now believe they have actually reversed blindness in mice through the transplantation of retinal stem cells into their damaged retinas. Scientists at Duke University and elsewhere have used stem cells to grow new skin, bone, and cartilage—developments that could be a true godsend for severe burn victims,

people who have sustained serious injuries, and victims of bone cancer, osteoporosis, and osteoarthritis (p. 15).

However, not everyone is as enthusiastic about ESCR. The promising aspects of ESCR have presented many, including many religious groups in the US, with a number of non-trivial ethical concerns.

### ***The Role of Religion in Perceptions of ESCR***

Religion plays a vital role in American society. Nationally representative surveys indicate that over 80 percent of adults in the United States report a formal religious affiliation and roughly 40 percent acknowledge attending religious services at least once a month (General Social Survey, 2002; Pew Research Center, 2009). From end-of-life decisions to coping with mental illness, many individuals turn to religion to guide their sense-making and decision-making processes. Therefore, researchers from various backgrounds and disciplines have attempted to explore the relationship between religious beliefs and decision making. Particularly in health research, scholars have found that religion and/or spirituality can have both positive and negative effects on health decisions (Miller, 1989; Koenig, George, and Titus, 2004; Ahmed, Atkin, Hewison, and Green, 2006).

Within the field of bioethics, the influence of religion on genetic decision making has also been extensively explored (Clayton, Hanning, Pfoth, Parker, Campbell, and Phillips, 1996; Decruyenaere, Evers-Kiebooms, Welkenhuysen, Bande-Knops, Van Gerven, and Van den Berghe, 1995, Durst, 2002). However, prior studies have generally been limited in scope, focusing on a single religious group, and avoiding multi-group

comparisons to a religious group (Dorff, 2003, Hathout, 2006; Meith, 2006). Given the plurality of religious groups co-existing in the US, and the US population's subscription to a large number of religious doctrines, in order to fully explore the influence of religious beliefs on perceptions regarding genetic decision making, particularly in regards to ESCR, a cross-religious investigation is necessary.

### ***The Role of Race/Ethnicity in Perceptions of ESCR***

While a cross-religious investigation can provide further insight into the decision making processes of individuals from various religious traditions, neglecting to concomitantly analyze the role of race/ethnicity in perceptions regarding ESCR fails to recognize the intersection of race/ethnicity and religion that often exists (Harris, Parrott, and Dorgan, 2004). Particularly for persons of color, values that come from religious beliefs and cultural values may not be easily untangled because religious traditions, styles of worship, and values are often deeply integrated into their understandings of their identity. In simple terms, religious identity cannot be separated from cultural identity.

Past studies have analyzed the influence of race/ethnicity on perceptions of genetic testing (Palmer, Martinez, Fox, Sininger, and Grody, 2008) and intention to submit to genetic tests (Zimmerman, Tabbarah, Nowalk, Raymund, Jewell, Wilson, and Ricci, 2006; Learman, Kuppermann, Gates, Nease, Gildengorin, and Washington, 2003). However, no studies to date have addressed the intersection of race/ethnicity and religious beliefs on perceptions of embryonic stem cell research. Therefore, the purpose of this study is to answer the overarching question: *how do individuals' religious beliefs*

*influence perceptions of ESCR?* To answer this question, the researcher qualitatively explored the perceived influence of religious beliefs on perceptions regarding ESCR among a sample of young adults from various racial/ethnic and religious backgrounds.

## **METHODS**

### ***Study Design***

To answer the research question: *how do individuals' religious beliefs influence perceptions of ESCR*, the researcher chose a qualitative, naturalistic inquiry approach (Lincoln and Guba, 1985). Naturalistic inquiry was chosen because it allows the researcher to understand multiple, socially constructed realities. Several characteristics are inherent in naturalistic inquiry. These include: natural setting, use of a human instrument, utilization of tacit knowledge, qualitative methods, purposive sampling, grounded theory, inductive data analysis, emergent design, and criteria for insuring trustworthiness (Lincoln and Guba, 1985). Therefore, in-depth interviews with undergraduate and graduate students from multiple racial/ethnic and religious backgrounds from a state university in the southwestern U.S. were conducted.

Glaser and Stauss's (1967) grounded theory methodology was utilized to analyze the interview data, because of grounded theory's multiple strengths. The first is the purposeful sampling design the method proposes. By systematically and purposefully searching for participants from various religious and racial/ethnic backgrounds to take part in the study, more variability in responses emerges. Additionally, the use of grounded theory allows a structured and systematic way for analyzing data and enables

the researcher to develop a conceptual model for understanding the phenomenon under observation (Lincoln and Guba, 1985; Denzin and Lincoln, 2000).

### ***Sample and Data Collection***

To ensure that various racial/ethnic and religious backgrounds were portrayed, the researcher recruited a purposeful non-probability convenience sample representing the intersections of specific religious and racial groups (Lincoln and Guba, 1985; Denzin and Lincoln, 2000; Erlandson, Harris, Skipper, and Allen, 1993). For instance, Caucasian Protestants, Hispanic Catholics, and African-American Muslims were recruited for the study. The purposive method of choosing participants attempts to bring together a sample in which multiple and various perspectives are represented. According to Lincoln and Guba (1985),

[in purposive sampling] the object of the game is not to focus on the similarities that can be developed into generalizations, but to detail the many specifics that give the context its unique flavor. A second purpose is to generate the information on which the emergent design and grounded theory can be based (p. 201).

The Pew Forum on Religion and Public Life (2009) identifies the major religious groups currently within the U.S. as: Protestantism (49.8% of the U.S. population are Protestants), Roman Catholicism (24.5%), Judaism (1.4%), Mormonism (1.3%), Jehovah's Witnesses (0.6%), Islam (0.5%), Hinduism (0.4%), Eastern Orthodox (0.3%), and Unitarian Universalist (0.3%).

Additionally, persons identifying themselves as atheist/agnostic or of another religious doctrine were also included. The racial/ethnic categories of Caucasian, African-American, Hispanic, Asian, and International employed in this study were based on data from the 2000 U.S. Census. The category of *other* was added for those individuals that consider themselves to be in more than one category. Table 3.1 depicts the interview matrix guiding the selection of interviewees.

Participants were recruited from a major state university in Texas (graduate or undergraduate students) and were 18 years old or older. Participants were from all disciplines and academic departments. College students were sought for this study because they are more educated than the general population and the college environment itself provides opportunities for reflection on complex issues such as ESCR. Additionally, college students represent the future leaders and policy makers of this country (Khera and Benson, 1970; Sheth, 1970; Brown and Brown, 1993). Therefore, understanding their perspectives now provides insight into their future decision-making.

Following approval from the university's Institutional Review Board (IRB), the researcher recruited participants via Facebook (social networking website) and through snowball sampling. On the social networking site, Facebook invitations to participate in the study were sent to members of the university network. Only this particular state university's network was used to recruit individuals, therefore only currently enrolled students were sent group and event invitations. After individuals expressed interest in participating in the study, a demographic survey was e-mailed to the potential participant to determine whether the person fulfilled the criteria spelled out in the sample matrix. A

concerted effort was made to ensure equal levels or similar number of interviewees in each of the cells (race and religious groups) represented in the sample matrix (see Table 3.1).

**Table 3.1. Interview Matrix**

	Protestant	Catholic	Jewish	Mormon	Jehovah's Witness	Islam	Hindu	Other	Non- Religious
Caucasian									
African- American									
Hispanic									
Asian									
International									
Other									

If an individual met the criteria outlined in the sample matrix, he/she was contacted about scheduling an interview. These interviews were conducted in various locations on campus between October 2008 and August 2009. Interviews were conducted until they reached a point of redundancy (Lincoln and Guba, 1985).

Data were collected through in-depth interviews with 37 students. The interviews were semistructured, as the researcher had a set of guiding questions, but the style was open-ended and responsive to the lead of the interviewee (Spradley, 1979; Erlandson et al., 1993). The interview guide was structured to focus on the dimensions of religious beliefs, ethical/legal/social issues surrounding embryonic stem cell research (ESCR), and



perceived influence of religious beliefs on perceptions regarding ESCR. Each interview lasted between 20-60 minutes. The interview protocol is depicted in *Appendix D*.

During each interview, the researcher recorded the interaction (with participant's permission) and took handwritten field notes. Confidentiality of all participants was ensured. Any identifying characteristics or personal descriptions were omitted from the typed transcripts, and from all published accounts of the interview data. For example, in this study all names of participants have been changed. All interviews were transcribed verbatim by a professional transcription service.

### ***Data Analysis***

Collected data were analyzed using Glaser and Stauss's (1967) grounded theory methodology to identify emergent themes. The transcribed interviews were segmented into their smallest meaningful units (sometimes a short phrase, sometimes longer paragraphs) and these units were printed on four-by-six index cards. Each unit/card was coded, or identified as belonging to a specific theme or category, and printed sequentially (Lincoln and Gonzalez y Gonzalez, 2008). Cards that held similar information were grouped together. Cards that presented new information were placed into new stacks. This process continued until all cards had been categorized. The codes included racial/ethnic and religious information about the participant interviewed. Clustering the themes and categories was an on-going process that was repeated throughout the data gathering process.

Another independent researcher analyzed a random selection of interview transcripts to ensure the trustworthiness of the analysis. The researchers later compared

coding schemes for an interrater reliability check. Disagreements were minimal, and were resolved through discussions between the coders.

## **FINDINGS**

### ***Characteristics of Participants***

A total of 37 university students were recruited for the study. The sample included eight Catholics (n=8), eight Atheists/Agnostics (n=8), seven Protestants (n=7), four Non-denominational Christians (n=4), three Muslims (n=3), two Jehovah's Witnesses (n=2), two Hindus (n=2), one Jew (n=1), two Other (n=2). These individuals came from several racial/ethnic backgrounds: eleven Caucasians (n=11), nine African-Americans (n=9), six Hispanic Americans (n=6), three Asian Americans (n=3), seven International students (n=7), and one within the Other category (n=1). While International was not a categorization outlined by the 2000 U.S. Census, seven individuals classified themselves as such. Table 3.2 illustrates the interaction of religion-by-ethnic group and subsequent frequencies of the sample. Participants were between the ages of 18-36 and were from various educational disciplines and levels (graduate/undergraduate).

Findings – presented below - have been organized to answer the research question, and present any additional themes that emerged in the research. The quotations presented in the findings are respondents' verbatim statements, taken directly from the transcriptions of the interviews. Each respondent was given a pseudonym to ensure confidentiality and anonymity.

**Table 3.2. Sample Frequencies (n=37)**

	<i>Caucasian</i>	<i>African-American</i>	<i>Hispanic American</i>	<i>Asian American</i>	<i>International</i>	<i>Other</i>
<i>Catholic</i>	2	2	2	0	2	0
<i>Protestant</i>	3	3	1	0	0	0
<i>Non-Denominational Christian</i>	3	0	0	0	1	0
<i>Muslim</i>	0	1	0	0	1	1
<i>Jehovah's Witness</i>	0	1	0	1	0	0
<i>Hindu</i>	0	0	0	0	2	0
<i>Jewish</i>	0	0	0	1	0	0
<i>Atheist/Agnostic</i>	3	1	2	1	1	0
<i>Hoodoo</i>	0	1	0	0	0	0
<i>Wiccan</i>	0	0	1	0	0	0

### ***Meaning of Religious Faith***

In an effort to understand the sample studied, it was important to gain a perspective of the meaning of each individual's religious faith. Therefore, questions were asked assessing religious belief systems. These discussions included explanations of the tenants of each participant's faith and values. Even when the participants did not consider themselves to be religious or persons- of-faith, such as the Atheist/Agnostic participants, descriptions of their value systems were still offered. Examples of these explanations included Mark's (Hispanic American, Atheist/Agnostic):

*My personal beliefs are I cannot be 100% sure whether or not God does indeed exist or not. I don't think there's enough evidence to provide either one way or the other, especially the gods that are in present day society. But I find that*

*honesty is very important. I don't think that society runs functional, very functionally without it. I think being good to your fellow man is another important part of everything. Just being the best person that you can be without bringing harm to anyone else (p. 1-2).*

Jason's (International, Muslim):

*I pray five times a day. I fast once a month. In Islam, we have something that's called the five pillars of Islam, like the five basic things that you have to do. Like you have to believe that there is only one God, which is Allah and that Mohammed is the prophet of God. The second thing that you have to do is pray five times a day. The third is to fast once a month out of the year. Number four, you have to pay, we don't want to call it charity because charity is something that you do out of your own will, but you have to pay for the poor, that's 2.5% of all of your assets annually. So you have to do that and you have to go to Mecca for pilgrimage once in your lifetime if you could afford it and if you're like healthy enough to do it (p. 2-3).*

And Isabella's (Hispanic American, Catholic):

*Well, I guess values are the practices associated with being a Catholic. We have beliefs in God, Jesus Christ, Mary and we have to pray to the saints. This differentiates us from some other religions...So, you pray to the saints and ask them to pray for you and hope they will intervene with God and kind of, I guess, pass the message on...I think I follow most of them [tenants of faith] pretty*

*closely. There are some things that I might not be right on board with: a few like little controversial things (p. 2-3).*

Six of the eight Atheist/Agnostic participants did at one time subscribe to some religious doctrine. There were various reasons for leaving the church, but five of the six participants cited being raised in extremely religious environments as the foundation for their decision. For example, April (Caucasian, Atheist) stated:

*My parents are extremely religious. They used to force me and my sisters to attend service regularly. But when I got to high school, I started to question some of those beliefs. And the more I thought about it, the more I realized for myself that God didn't really exist and that I did have control over my life. My parents aren't supportive of this decision, but I am grown (p. 1).*

### ***Religious Beliefs and Views of ESCR***

The participants offered several explanations of the connections they made between their religious faith and its influence on their perceptions regarding ESCR. The themes that emerged from the study can be sorted into three broad categories: general beliefs about religion and ESCR, potential benefits of ESCR, and potential risks of ESCR.

### ***General Beliefs about Religion and ESCR***

Seventy-eight percent (n=29) of participants identified themselves as being followers of some religious doctrine. Of this group, 68% (n=20) believed that ESCR should be conducted and federally funded, in the United States. The most significant

contributions came from Isabella (Hispanic American, Catholic) and Samuel (Asian American, Jehovah's Witness).

During Isabella's interview, she was asked questions about her Catholic beliefs. A number of her beliefs including a belief in one God, in natural family planning, and in the sanctity of human life were consistent with Catholic teachings. However, when the conversation shifted to ESCR, her views centered on a compromise between religious faith and faith in science:

*I think there's a bit of a compromise. Like I do believe God determines many things. I believe that God will ultimately determine what happens to us... At the same time though, I believe that we're given as much capacity as human beings to do certain things through God. So, if we are able to sustain life for a bit, I don't think it is a bad thing. I don't think it's trying to play the role of God (p. 7).*

Jehovah's Witnesses have a number of beliefs similar to mainstream Christians, including belief in only one God (Religion Facts, 2009). However, the Jehovah's Witness faith teaches against a number of medical interventions including transfusions of whole blood, packed red blood cells, plasma, or platelets (Dixon, 1988). Samuel, an Asian American Jehovah's Witness is also a graduate student in Genetics. Therefore, a number of questions were asked to assess how he negotiated his religious beliefs with his research.

*A lot of people ask me how I negotiate my religious faith with my research, but I believe that God gave me the knowledge to do this type of research. I still pray daily that my steps are being ordered by Him and I constantly question the ethics*

*of my research. But I always come back to the same conclusion, by using the intellect that God has given me, I am doing His work (p. 17).*

Though a number of Jehovah's Witnesses are against ESCR, Samuel finds that his religious faith is not a hindrance to his research.

Thirty-one percent (n=9) of the participants were against ESCR and cited their religious beliefs as their justification. One example was from Jim (African-American, Catholic):

*The scientist [geneticist] in me will say, yes [ESCR should be allowed]. The Catholic in me says, no, because of the fact that you have to create...you're almost creating life in the test tube. And you're generating...you're playing with life. You're not God, we're scientists. So, even though people might say, 'okay, He has given us this knowledge.' He's also given us free will. He's given us knowledge to know right from wrong. You know what's ethical (p. 8-9).*

Approximately 22% (n=8) of the study participants identified themselves as being Atheist/Agnostic. Of these, 100% (n=8) were supporters of ESCR. Like their religious counterparts, rationalizations for this support were extremely varied. For example, Martin, a Hispanic American, Agnostic stated:

*The cell at conception isn't actually a human being as far as the way I can look at it logistically...So, there's really no question as to whether it's harming someone's right to life because really and truly it's not a person at that point. So, if we can use that to help a person who is already there and already alive, then I think we should" (p. 14).*

### ***Potential Benefits of ESCR***

When participants were asked what they perceived were the potential benefits of embryonic stem cell research the responses ranged from cancer and AIDS cures to recovering lost limbs and tissues. For instance, Austin (Caucasian, Protestant):

*The benefits are massive, I mean you have a few diseases that rob people of their lives. And you know, people in their elderly years who have perfectly healthy bodies and are trapped inside their minds with diseases like Alzheimer's. You have people with muscle dystrophy and sickle cell. I mean the ideas that we could stop some of that would be just amazing (p. 4).*

The majority of individuals that expressed concern (religious or legal) about ESCR were still able to see its benefits. One example is Bethany (Caucasian, Protestant). Bethany has some reservations about ESCR, however when asked whether she thought there were any potential benefits, she stated:

*Honestly, for me, I'm kind of up in the air on how to feel about it because of the cost vs. benefits. I'm kind of torn between how to feel because on one hand, I think if it helps further medical science and can actually save lives, then it's fine to an extent, but I'm not okay if it means killing something else (p. 7).*

Only one participant believed that there were no benefits to ESCR. Clayton, an African-American, Protestant stated

*There is not going to be a positive benefit because I don't believe that it's made for us to [go] into certain areas or to explore or experience certain things in life...That's just my personal belief..I just feel as if it's not meant for us to*



*venture out too far because I was reading the Bible last night...That's not mentioned and of course they didn't have the technology, given. But still, wouldn't there be some kind of evidence even in those times? I mean, why now? Why wait until 2008 to start showing up?...I just don't believe there's going to be a positive side to it. It might appear to be positive at first, but I feel it's just going to have a negative effect (p. 6-7).*

### ***Potential Risks of ESCR***

During the interviews, participants were also asked to identify what they perceived were potential risks of ESCR. The majority of participants felt that there was some level of risk involved with ESCR whether they were proponents or opponents of the research. For example, Ariel (African-American, Protestant) stated:

*With all scientific innovations, we run the risk of the science being corrupted. That is human nature. Someone could take something as innocent as stem cell research and decide to create a population of only blonde hair, blue-eyed individuals (p. 4).*

Austin (Asian American, Hindu) asserted:

*I believe that most human beings start anything in a benevolent way. But somewhere along the line people start to get blinded in the system. They try to find loopholes. So, I think that there are risks to this, to the research, if it's not conducted properly (p. 3).*

And Justin (International, Hindu) stated:

*One risk would be if there aren't proper guidelines and some crazy doctor decides he wants to have a lot of embryonic stem cells, he could create embryos just for the sake of creating or harvesting embryonic cells (p. 4).*

Only one individual believed that there was no risk involved with ESCR. Anna, a Caucasian, Atheist, declared:

*There isn't any risk (p. 1).*

For individuals who opposed ESCR because of religious beliefs, their ideas about perceived risk centered on the belief that embryos represent a human life. For instance, Bethany (Caucasian, Protestant) when asked what she perceived were the costs of conducting ESCR, she stated:

*I think it's babies...it's part religion but then part also just my personal, like I think that once the baby is conceived, then it's a baby. It's a person (p. 4).*

Cameron, an African-American Hoodoo, also believed that embryos represented a human life:

*I heard it's killing babies (p. 4).*

### ***Race/Ethnicity and Views about ESCR***

Seventy percent (n=26) of the sample identified themselves as non-Caucasian. Of these, 26% (n=9) were African-American, 26.9% (n=7) International, 23% (n=6) Hispanic American, 0.08% (n=3) Asian American, and 0.03% (n=1) identified themselves as Other. Among Caucasians (n=11), a small number did not support ESCR (n=3, 27.2%). Within the African-American category (n=9), 44.4% (n=4) supported

ESCR. Among Hispanic Americans, 100% (n=6) supported ESCR regardless of their religious affiliations. The majority of Asian Americans (n=2, 67%) were proponents of ESCR. Within the International category, 16.6% (n=1) were opponents of ESCR. Individuals that categorized themselves as Other were evenly split regarding their support.

In an effort to understand whether membership in specific racial/ethnic groups shaped participants' beliefs about ESCR, they were asked whether their cultural beliefs had any effect on their beliefs about ESCR. Two participants (0.08%) responded affirmatively. These two individuals were International/Hindu and Hispanic American/Wiccan. When asked whether his views on ESCR were based more on his religious or cultural beliefs, Andy (International, Hindu) responded:

*Mostly I think it's religion and culture intertwined. Especially coming from a place like India, where most people are Hindus and the culture is different from region to region...I think my beliefs are mostly cultural (p. 8).*

Katelyn (Hispanic American, Wiccan) stated:

*I both agree and disagree [with race/ethnicity having an impact]. I disagree because a lot of people look to their religion for answers to a lot of things, but at the same time, I agree because there's a lot of folks who are part of a religion but at the same time they hold their own beliefs because of their cultural beliefs (p. 9).*

## **DISCUSSION**

The participants in this study offered several explanations of the connections they made between their religious faith and its influence on their perceptions regarding ESCR. The themes that emerged included: general beliefs about religion and ESCR, potential benefits of ESCR, and potential risks of ESCR. The majority of participants believed that ESCR should be conducted and federally funded, in the United States. Most of the study's participants were also able to cite potential benefits to conducting ESCR whether or not they were supporters. However, the majority of participants felt that there was some level of potential risk involved with ESCR whether they were proponents or opponents of the research. In relation to racial/ethnic group membership, a small minority of participants identified membership as an influence on their perceptions.

A recent poll conducted by the Pew Forum on Religion and Public Life (2009) found that the majority of the U.S. population supports ESCR. The present study agrees with this finding, given its suggestion that even among individuals with strong religious beliefs ESCR is still supported by the majority. In this study, support was more prominent among individuals from Atheist/Agnostic, Islamic, and Hindu faiths. However, among Christian participants, there was an even split between individuals that supported and did not support ESCR. Among the Christian participants, some cited their religious faith for their negative perceptions about ESCR and others that supported ESCR referred to their knowledge of the science prompting their positive beliefs.

A number of bioethicists and scientists believe that there is considerable hope that embryonic stem cells can be utilized in the treatment of a number of diseases and disorders (Borge and Evers, 2003; Herold, 2006; Korobkin and Munzer, 2008). Additionally, findings from prior studies suggest the majority of the American population are able to identify potential benefits of the science whether they support ESCR or not (Zhang and Psamathi, 2008; Pew Forum on Religion and Public Life, 2009). Findings from our study also support this notion, as most participants were able to identify potential benefits to conducting ESCR despite their religious beliefs.

Potential risks associated with ESCR range from tissue rejection to the development of tumors (Tzukerman, Rosenberg, Ravel, Reiter, Coleman, and Skorecki, 2003; Saric, Frenzel, Hescheler, 2008). Within the present study, the majority of participants felt that there was some level of potential risk involved with ESCR. This finding was not limited to just those participants that were opposed to ESCR, however. Even among participants that favored ESCR, potential risks were still acknowledged.

Harris et al. (2004) identified race/ethnicity as being heavily intertwined with religious beliefs. In the present study, there were some trends among individuals from certain racial/ethnic groups, particularly among African-Americans and Hispanic Americans on perceptions of ESCR regardless of religion. However, few were able to articulate the effect of their racial/ethnic backgrounds.

This is the first qualitative study to explore and compare the influence of religious beliefs on perceptions of ESCR from a cross-cultural and cross-religious perspective. Therefore, the findings from this study should be viewed within the context

of the following methodological considerations. While this study has several strengths including the purposeful sampling of individuals from various racial/ethnic and religious backgrounds, its major limitation is its exploratory (and not theory-building) nature. Typically, within grounded theory, theory development is the desired outcome. However, due to the exploratory nature of the study, the overall goal of this study was not theory development but identifying participants' view points, instead. Therefore, future studies should attempt to further analyze the influence of religious beliefs on perceptions of ESCR in order to develop potential theories about this relationship.

ESCR has great promise for helping to alleviate human disease and suffering. But it is a multifaceted and controversial issue. This study has offered a glimpse into the religious and racial/ethnic influences on perceptions regarding ESCR for a sample of college students from various racial/ethnic and religious backgrounds.

**CHAPTER IV**  
**THE INFLUENCE OF RELIGIOUS RHETORIC ON POLITICAL DISCOURSE**  
**REGARDING EMBRYONIC STEM CELL RESEARCH**

**INTRODUCTION**

Embryonic stem cell research (ESRC) has generated considerable public deliberation and controversy in many countries. With headlines of cloned animals and medical advances in genomics permeating popular media, few individuals within contemporary society have not heard the words *stem cell*. According to bioethicist Mieth (2006), for some, “the term ‘stem cells’ has become a magic password to enter a medical utopia where physicians will be able to overcome all human ailments once and for all” (p. 1). However, many individuals have merely a vague understanding of the terms due to the mediated images and policy discussions to which they have been exposed (Brossard and Shanahan, 2003).

Veterinarian Lisa Fortier (2005) states “stem cells are generically defined as undifferentiated cells that are capable of self-renewal through replication as well as differentiation into specific cell lineages” (p. 415). In other words, stem cells have the ability to self-renew and to develop into many different cell types in the body. There are two basic kinds of stem cells: those found in certain adult tissues and those found in the cells of three-to-five-day-old embryos. Embryonic stem cells can become all cell types of the body because they are pluripotent (i.e., they have the ability to develop into any of

the 220 cell types in the human body) (Wert and Mummery, 2003; Reubinoff, Perza, Fong, Trouson, and Bongso, 2000; Thomson et al., 1998; Keller and Shodgrass, 1999).

With headlines such as “Are scientists playing God? It depends on your religion” (New York Times, November 20, 2007), and “Not on Faith Alone” (New York Times, July 23, 2006) saturating the media, it is evident that religion seems to play a major role in the public discourse about stem cell research. Such role may represent a huge infraction of scientific principles of neutrality and objectivity but may, paradoxically, dictate policy related to ESCR.

### ***Theory of Language Convergence/Meaning Divergence***

In order to understand the role that religious discourse may play in policy-making and adoption, we must first understand the process of sense-making (not necessarily religious) that individuals undergo. Though many theories within the field of communication have been developed to analyze the concepts of shared meaning (Olufowote, 2006), sense-making (Weick, 1995), and symbolic convergence (Bormann, 1996), these theories fail to explain fully the complex and sometimes contradictory meanings that surround a social issue, and are adopted—despite the contradiction—by social groups. Therefore, communication scholars Dougherty, Kramer, Klatzke, and Rogers (2009) proposed a theory of language convergence and meaning divergence to understand these processes. Language convergence is defined as common labels used by participants in finding meaning (Dougherty et al., 2009). In other words, participants use the same language and create the potential for shared meaning.



Dougherty et al. (2009) also state “this illusion of shared meaning through similar language and conversational shortcuts is undercut when we explore how meanings actually diverge significantly within similar language” (p. 29). Meaning can diverge in two primary ways: (a) when different words are used to clearly articulate the notion that different meanings are at play; and (b) when the exact same word is used to articulate different meanings (Dougherty et al., 2009). In other words, divergence can be found at both the level of different language being utilized and also different meanings been attributed to the same words. For the purposes of this study, the multiple meanings attributed to the terms ESCR become the central focus.

While the concept of language convergence/meaning divergence is not unique to ESCR, very little attention has been placed on the intersection of language convergence/meaning divergence and ESCR. However, understanding the ways in which language converges with religious beliefs and conversely how meanings may diverge with religion, plays a major role in conceptualizing the influence religious beliefs may exert on political discourse regarding ESCR. Therefore, this paper seeks to fill the gap in literature by answering the question: *how does religious rhetoric influence political discourse regarding embryonic stem cell research?*

## **METHODS**

### ***Study Design***

To examine the convergence and divergence between the official stances of major religious groups in the United States and political discourse related to ESCR, a qualitative design (using grounded theory principles) was employed. Congressional

records of any discussions and voting that occurred on the U.S. Senate and House floors during the time period of January 1, 1999 to March 10, 2009 were examined. From the records, arguments were extracted and then juxtaposed with the official stances of the major religious groups in the United States for areas of agreement and disagreement.

Glaser and Stauss's (1967) grounded theory methodology was utilized to identify emergent themes from the arguments. The original conception of grounded theory analysis was framed in terms of a series of iterations as a process of constant comparisons. In other words, the researcher immersed herself in multiple readings of the texts (data) and "moved back and forth" within the data to develop conceptual categories. After categories were created, the process of finding examples to support the categories occurred. The last step in the process was the analytic step. This is the point where the researcher took the various code groups/themes, made judgments about how they relate to each other, and wrote the story they collectively tell. As Strauss and Corbin (1998) contend, "the researcher begins with an area of study and allows the theory to emerge from the data" (p. 12).

The design and methods chosen for this study have several strengths. First, the examination of congressional records allows for political discourse to be analyzed carefully. Direct analysis of the records, as opposed to reliance on media coverage of political conversations, permits exploration into the ways in which lawmakers use language to construct their affiliation or identification with a group (Dilevko and Gottlieb, 2009). Additionally, the use of grounded theory enables a structured and systematic way for analyzing data and gives the researcher the ability to develop a

conceptual model for understanding the phenomena under observation. By suspending all a priori knowledge within the research process, the researcher is able to allow the categorizations inherent in the data to emerge, and later, to compare findings with theory.

### ***Sample and Data Collection***

To explore the context in which congressional bills regarding embryonic stem cell research were presented, the researcher searched the Government Printing Office (GPO) access website (2009) for congressional records. Congressional records were chosen for analysis because congressional discourse represents an important site for studying public understanding of science in the United States (Lynch, 2009). Congressional records (CR) from 1995 (CR, Volume 141) to 2009 (CR, Volume 155) are available on the GPO database. The researcher searched the site using the key terms: embryonic, embryo, stem cell, and stem cell research. All resulting documents were carefully examined and only notes from committee and floor meetings directly related to the issue of ESCR were analyzed. Agenda listings and congressional calendars were eliminated from the analysis. Using these inclusion/exclusion criteria, a total of 157 records from January 1<sup>st</sup>, 1999 through March 10, 2009 were submitted to analysis.

To identify the official stances of the major religious groups in the United States regarding ESCR, the researcher utilized the Pew Forum on Religion and Public Life website (2009). The Pew Forum on Religion and Public Life website was chosen because researchers affiliated with the forum track and aggregate news regarding the influence of religions and religious organizations on political behavior. Additionally,

Pew researchers regularly conduct independent research, including surveys, reports, books, and interviews on issues at the intersection of religion and public affairs (Pew Trusts, 2009). Various media outlets have consistently reported findings from the Pew Forum on Religion and Public Life. One such report published on July 17, 2008 outlines U.S. religious groups' official positions on ESCR.

According to the Pew Forum on Religion and Public Life (2009), the major religious denominations within the U.S. are: Protestantism (49.8% of the U.S. population are Protestants), Roman Catholicism (24.5%), Judaism (1.4%), Mormonism (1.3%), Jehovah's Witnesses (0.6%), Islam (0.5%), Hinduism (0.4%), Eastern Orthodox (0.3%), and Unitarian Universalist (0.3%). Therefore, the official positions on ESCR of the American Baptists of the USA, Southern Baptist Convention, Episcopal Church, Evangelical Lutheran Church in America, Presbyterian Church, United Church of Christ, United Methodist Church, Roman Catholicism, Judaism, Mormonism, Islam, Hinduism, and Unitarian Universalists were extracted from this database. Table 4.1 presents these official statements. It is important to note that this database made no distinction between the various groups within the Presbyterian Church. The official positions of the Jehovah's Witness and the Orthodox faiths were not available, and these groups were, therefore, removed from this analysis.

**Table 4.1. Religious Groups' Official Positions on Stem Cell Research**

<b>Religious Group</b>	<b>Official Stance</b>
<b>Protestantism</b>	
American Baptists in the USA	The group has no explicit policy on the issue; rather it states that one must be guided by one's own relationship with God and Scripture.
Southern Baptist Convention	In 1999, the Southern Baptist Convention reaffirmed its "opposition to the destruction of human embryos...[and] support for the development of alternative treatments which do not require human embryos to be killed."
Episcopal Church	In 2004, the church's governing body, the General Convention, declared itself in favor of stem cell research as long as the embryos used would have been destroyed otherwise, the embryos were not created solely for research purposes and the embryos were not bought or sold.
Evangelical Lutheran Church in America	The ELCA does not have an official position on the issue. In 2005, the Churchwide Assembly, the governing body of the church, created a task force to study the issues of genetics and biotechnology and to present a report in 2011.
Presbyterian Church	In 2004, the Presbyterian Church's governing body, the General Assembly, reaffirmed its position in favor of stem cell research that is intended to restore health to those suffering from serious illness
United Church of Christ	In 2001, the United Church of Christ ruled in favor of research on embryonic stem cells that would otherwise be discarded from in vitro fertilization.
United Methodist Church	In 2004, the United Methodist Church asserted its support for therapeutic cloning in which spare embryonic stem cells resulting from in vitro fertilization are used. The church also maintained its opposition to the use or creation of embryonic stem cells solely for the purpose of research.
<b>Roman Catholicism</b>	In accordance with their anti-abortion stance, the U.S. Conference of Catholic Bishops supports adult stem cell research but opposes embryonic stem cell research since it creates or destroys human embryos.
<b>Judaism</b>	All major Jewish denominations—including the Reformed, Conservative, Orthodox, and Reconstructionist movements—support both embryonic and adult stem cell research as long as it is for medical or therapeutic purposes.
<b>Mormonism</b>	The Church of Jesus Christ of Latter-day Saints has not issued a statement on the issues of stem cell research.

**Table 4.1. Continued**

<b>Religious Group</b>	<b>Official Stance</b>
<b>Islam</b>	There is no explicit Islamic ruling on the issue of stem cell research. While some Muslim leaders allow for stem cell research on the ground that, according to Islam, an embryo in the early stage of pregnancy does not have a soul, others argue that the termination of an embryo at any stage of pregnancy is morally impermissible.
<b>Hinduism</b>	Though Hinduism believes that life begins at conception, the religion has no official position on stem cell research.
<b>Unitarian Universalist Association of Congregations</b>	In 2006, the association's policymaking body, the General Assembly, stated its support for stem cell research as long as the research is for medical therapies and not the reproductive cloning of humans.

***Data Analysis***

Collected data were analyzed in two steps. The first step consisted of identifying and marking all arguments presented on the Senate and House floors that related ESCR to any religious affiliations or used any rhetoric that mirrored that of a religious denomination. For example, arguments that included rhetoric alluding to life beginning at conception were marked/selected from the records as this is a common Christian and Hindu viewpoint. It is also important to note that at this level of analysis, the researcher combined Protestant denominations and Roman Catholicism into the broader Christian category because of the shared beliefs in one God, the holy trinity, and the role of Jesus as both the Messiah and Son of God (Gellman and Hartman, 2002). While there are some recognizable differences between the religious denominations, for the purposes of this study, Christian viewpoints will be analyzed collectively.

Based on the theory of language convergence/meaning divergence (Dougherty et al., 2009), the next analytical step was determining whether the argument either converged or diverged with a particular religion's official stance on the issue of ESCR. To conduct this stage of analysis, each congressional record was examined closely for arguments with language that resonated with a particular religious denomination. The extracted arguments were then evaluated by two independent researchers to compare the argument with the official stances of the religious denominations for areas of language convergence and meaning divergence.

Credibility and trustworthiness of the study were ensured through inter-rater reliability checking (Strauss and Corbin, 1998). Thirty percent (n=48) of the documents were coded and categorized by two independent researchers. Disagreements were minimal, and were resolved through discussions between the coders.

## **FINDINGS**

From the 157 congressional records obtained between January 1, 1999 and March 10, 2009, a total of 94 arguments were identified as relating ESCR to a particular religious orientation, or using rhetoric mirroring that of a religious group. Of the 94 arguments extracted, a total of 59 arguments were language convergent and 35 arguments demonstrated meaning divergence with the stances of specific religious groups. Table 4.2 is an abridged version of the original argument extraction and analysis.

**Table 4.2. Abridged Version of the Original Argument Extraction and Analysis**

<b>Record Code</b>	<b>Speaker</b>	<b>Unit</b>	<b>Pg. No</b>	<b>Con/Div</b>	<b>Religion</b>
7-20-1999	Schaffer	Mr. Speaker, funding destructive embryonic research with tax dollars is unlawful, unacceptable to the American people, and unnecessary since recent advancements reveal viable stem cell alternatives in adults.	1	Convergence	Christianity
7-20-1999	Schaffer	The Wall Street Journal article by L. Johannes entitled, “Adult Stem Cells Have Advantage Battling Disease,” states that adult ‘precursor’ or stem cells “may prove much more useful to medical science” than cells obtained by killing human embryos—that is, preborn human boys and girls.	2	Convergence	Christianity
7-20-1999	Schaffer	Mr. Speaker, killing preborn babies for tissue harvest is never justified.	2	Convergence	Christianity
7-20-1999	Schaffer	I defy anyone in this chamber to look me in the eye and say that the deliberate taking of a new life, a unique and growing human being, is a justifiable sacrifice for the curiosity of science.	2	Convergence	Christianity
7-20-1999	Schaffer	I defy anyone to tell the American people they have no choice but to pay for these experiments in defiance of their conscience, the law, and the more fundamental principles of human dignity.	2	Convergence	Christianity
6-19-2001	Brownback	They take an embryo, raise it to a certain age, kill the embryo, take the stem cell out of the embryo—the young stem cells inside that are reproducing on a rapid basis—and use those in research, or use those for human development and in the capacity of making other organs in the future.	1	Convergence	Christianity
6-19-2001	Brownback	It would be like saying of the Presiding Officer, you can’t kill him, but you can take his heart, you can take his lungs and brain, and his eyes out. And, if you get those, even though somebody kills him, that is OK.	2	Convergence	Christianity
6-19-2001	Brownback	It has never been, and it will never be, acceptable to kill one person for the benefit of another—no matter how big, or how promising the purported benefit.	2	Convergence	Christianity
6-19-2001	Brownback	The very act of harvesting cells from live human embryos results in the death of the embryo. Therefore, if enacted, this bill would result in the deliberate destruction of human embryos— human life in its most infant stage.	2	Convergence	Christianity



Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
6-19-2001	Brownback	In the future, people are going to say they want embryonic stem cells, but what they really want is to be able to clone you, to clone another individual, take that DNA material from you, from me, from somebody in this room, destroy a young human embryo, put the DNA material in there, start this to reproducing for a while, kill that embryo, take the stem cells out, and work with those because they are exact copies of the DNA from us.	3	Convergence	Christianity
7-11-2001c	Ryun	Mr. Speaker, I rise in support of ethical stem cell research and in opposition to the destruction of human life.	1	Convergence	Christianity
7-11-2001a	Delay	Once we begin justifying the killing of human beings at one stage of development, we invite other troubling applications.	2	Convergence	Christianity
7-11-2001a	Delay	Human life is too valuable.	2	Convergence	Christianity
7-11-2001a	Pence	Mr. Speaker, adult stem cell research is pro-life, but destroying nascent human beings for research is not pro-life.	2	Convergence	Christianity
7-11-2001b	Pitts	Killing one human life, even though very tiny, on the off chance of maybe one day saving another, is not ethical, moral, and, I should add, even legal to do with taxpayer money.	1	Convergence	Christianity
7-11-2001c	Ryun	Allocating Federal dollars for research that retires destruction of human embryos would require many Americans to fund something that they morally oppose.	1	Convergence	Christianity
7-11-2001c	Smith	there is no such thing as a “spare” or “leftover” person.	1	Convergence	Christianity
7-11-2001c	Smith	Mr. Speaker, the story of Hannah and other adopted embryos underscores why we should not spend Federal tax dollars to destroy human embryos to steal their precious stem cells.	1	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-23-2001	Pence	Madam Speaker, as the debate over using Federal funds to support embryonic stem cell research goes forwards, I would urge my colleagues in this Chamber to consider the clear words of Pope John Paul II spoken to our President today, who said in Rome, “Experience is already showing how a tragic coarsening of consciences accompanies the assault on innocent life in the womb, leading to the accommodation and acquiescence in the face of other related evils such as euthanasia, infanticide, and, most recently, proposals for the creation for research purposes of human embryos, destined to destruction in the process.”	1-2	Convergence	Christianity
7-23-2001	Pence	The Pope went on to say, “A free and virtuous society which America aspires to be must reject practices that devalue and violate human life at any stage from conception until natural death.” May we in this Chamber, Madam Speaker, and our President heed the words of this gentle servant of God.	2	Convergence	Christianity
8-1-2001	Hatch	If we allow the creation of embryos solely for their destruction, we will effectively be discriminating against an entire class of human beings by saying to them: I will destroy your life for the sake of someone else’s or my own. If we accept the notion that some lives have more value than others, if we allow scientists or doctors or politicians to play God and determine which lives have value and which do not, then we have demolished the very foundation upon which we have built our freedom. Human embryos are not machines to be used for spare parts, all in the name of “medical progress.” We cannot view human life as an exploitable natural resources, ripe for the harvest.	1	Convergence	Christianity
8-1-2001	Hatch	Unless humans are seen as created in God’s image and endowed by Him with the right to live, there will be no stopping the scientists and doctors from doing whatever they want to do.	3	Convergence	Christianity
6-20-2002a	Pence	The promise that opening up this Pandora’s box seems to hold for some pales in comparison to the backdrop of that great Biblical adage that reads in the book of Isaiah that, I am God, and there is no other.	2	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
6-20-2002a	Pence	Many in the scientific community, Mr. Speaker, believe that nascent embryonic life should be used for medical research through this procedure known as therapeutic cloning. They have come up with this innocuous term. It is very misleading. In this procedure the cloned embryo is created solely for the use of its parts. The human is given life, only to be destroyed a few days later for specialized stem cells.	2	Convergence	Christianity
6-20-2002a	Pence	I fear we are turning life literally into a wholesale commodity to be created and destroyed. Make no mistake, if we proceed down this course, millions of human embryos, nascent human life, will be created and then destroyed, and even then we may not attain the scientific achievements that have been promised to us.	2	Convergence	Christianity
7-16-2002	Souder	Research using embryos and clones requires the creation and destruction of a form of human life.	1	Convergence	Christianity
8-1-2002	Hatch	All human cloning is reproductive, in the sense that it creates—reproduces—a new developing human intended to be genetically identical to the cloned subject. The difference is that one is intended to be carried to term and the other is intended to be deliberately killed for its cells.	1	Convergence	Christianity
8-1-2002	Hatch	To oppose any form of human cloning is to preserve the sanctity of human life while providing real solutions based on real science. Let us choose what is right. We must ban all human cloning, no matter how it is cloaked.	3	Convergence	Christianity
2-27-2003	Pitts	As a Nation we must choose between the sanctity of life ethic and the quality of life ethic... We need to stop playing word games and admit that serious issues are at stake here. This vote will determine whether as a Nation will affirm the dignity of human life or reject it.	3	Convergence	Christianity
2-27-2003	Renzi	The issue has to do with us playing God and allowing human embryos to be produced. Make no mistake about it, we are compassionate Americans. We care about pain and suffering, we care about curing diseases; but at the cost of creating human life, human embryos?	3	Convergence	Christianity
2-27-2003	McGovern	As the Good Book says, "I set before you today life and blessings, death and destruction. Now choose life." And it is my hope and confidence we will do so today.	9	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
2-27-2003	Souder	We must finally draw the line and stop the exploitation of all forms of human life. The science is clear. So is the moral issue. In my favorite movie, "Rudy," a great scene has the priest telling Rudy, there are two things in life he knows for sure, one is that there is a God, and, secondly, that he is not God.	9	Convergence	Christianity
2-27-2003	Sensenbrenner	As I recall, when Moses came down from the mountain, he had 10 commandments with him. One of them said thou shalt not murder and the other said thou shalt not steal, and I do not think anybody in their right mind would say that criminal laws saying that murder and theft are criminal in nature is imposing religious views on anybody. They are both wrong; they are both criminal.	14	Convergence	Christianity
2-27-2003	Green	Many oppose cloning because they believe it is not allowed in their religious beliefs. The Greenwood substitute prohibits human cloning, but it allows for our God-given intelligence to make our world a healthier and safer and less painful place. As Christians, I hope that is our mission and our prayer, to eliminate human suffering.	19	Convergence	Christianity
6-16-2004	Pence	"We cannot diminish the value of one category of human life, the unborn, without diminishing the value of all human life." Let us choose life. Let us honor Reagan. Let us honor his pro-life values by continuing to say no to embryonic stem cell research.	1	Convergence	Christianity
6-25-2004a	Brownback	Here we are not talking about adult stem cell research or umbilical cord blood which are supported by virtually everybody and are producing true results—here we are talking strictly about destructive embryonic stem cell research which results in the death of a young human embryo after its conception.	2	Convergence	Christianity
10-11-2004a	Sessions	I remember the 100th Psalm that says, Without our aid he did us make. Or the Declaration of Independence says, We are created equal. If you believe we are created beings and that there is a sacredness to life, anybody ought to have at least some concern about this question of creating a human being in the making and then destroying that to carry out research matters.	1	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
5-18-2005	King	Killing human embryos is morally wrong. A human embryo, a person in his or her earliest stages, must be destroyed to obtain embryonic stem cells. Destroying early human life shows a profound disrespect for human life.	2	Convergence	Christianity
5-24-2005	Pence	You see, I believe that life begins at conception and that a human embryo is human life. I believe it is morally wrong to create human life to destroy it for research, and I further believe it is morally wrong to create human life to destroy it for research, and I further believe it is morally wrong to take the tax dollars of millions of pro-life Americans who believe, as I do, that human life is sacred, and use it to fund the destruction of human embryos for research.	3	Convergence	Christianity
5-24-2005	Kolbe	What is wrong with this legislation? The motives of its sponsors are so noble. Well, I will tell you two things that are fatally wrong with this legislation. The first one is, for the first time in our national history, taxpayer's dollars are going to be spent for the killing of innocent human life. That is number one. And number two, this bill tramples on the moral convictions of an awful lot of people who do not want their tax dollars going to be spent for killing innocent human life. Americans paid a terrible price for not recognizing the humanity of Dred Scott. We are going to pay a terrible price for not recognizing the humanity of these little embryos. We should not go down that road.	27	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
5-24-2005	Pomeroy	<p>As a justification for embryonic stem cell usage—basically that we should be about doing the greatest good for the greatest number of people. That is the utilitarian way. It is worth noting that if a society only did what was the greatest good for the greatest number of people, that society would kill off the elderly who were no longer productive and kill of the young who were not likely to ever be very productive. That would also be a society that did not spend time trying to fix something that had been extremely broken. That is a society that would simply weigh the cost to repair a human, decide that such a person was “totaled” then clone a new one to replace it. That society would be killing its very soul. That is no the American way. We want to be a help to the helpless, and speak for those who can’t speak. A moral society should do that. To demand money from American taxpayers so that we as a Congress can encourage the destructive use of life under the guise that it may be thrown away anyway, it not a direction that this America should go. Our history has been that, rather than destroying life, we go to all kinds of extremes to save it. If a child is in a deep hole, America sends all the resources it has to try to save it regardless of cost. When someone may not return from a trip to the moon, we use every available resource to try to bring them home. When a soldier is captures or out on the battlefield wounded, many others often risk their lives to save the one. That has been, that should be our legacy. What a legacy!</p>	35-36	Convergence	Christianity

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
5-24-2005	Pelosi	The Episcopal Church in its letter in support of this legislation says: "As stewards of creation, we are called to help men and renew the world in many ways. The Episcopal Church celebrates medical research as this research expands our knowledge of God's creation and empowers us to bring potential healing to those who suffer from disease and disability." This is what they wrote, and much more, in support of this legislation.	18	Convergence	Christianity
6-29-2006	Frist	An embryo is nascent human life. It is genetically distinct as that individual; it is biologically human; it is living. This position is consistent with my faith. But to me it isn't just a matter of faith; it is a matter of science.	2	Convergence	Christianity
6-29-2006	Brownback	I view human life as sacred at all of its stages and all of its places. Period. It is unique, it is beautiful, it is a child of the living God. It deserves our respect and protection under law at the very earliest stages of life and at the very latest stages in life. It is life in this country and a life in outer countries. It is life seeking to come to this country in whatever form it may be. This life is unique and sacred. We can try to divide it under law. We can say it is property at this stage of life; it is not worth living at that stage of life. All of those, I think, are false distinctions. Life is sacred, period, per se because it is human and it is sacred, period, because it is human. That is the point of view from which I come. That is the point of view from which I come. That is the point of view from which I think a lot of Americans come.	1	Convergence	Christianity
5-24-2008	Stupak	Those of us who believe in the sanctity of life from conception to our last breath, find the logic of the proponents of embryonic stem cell research flawed. H.R. 810 allows research and science to triumph philosophy and values.	3	Convergence	Christianity
7-11-2001a	Lewis	Life begins at conception, and the use of embryos for research destroys young life.	1	Convergence	Christianity and Hinduism
2-27-2003	Vitter	Human life begins at conception. This fact is not a matter of faith. Every contemporary textbook of human embryology teaches that the life of the new individual human being begins at fertilization.	24	Convergence	Christianity and Hinduism

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
6-25-2004a	Brownback	until and unless someone can establish the unborn child is not a living human being, then that child is already protected by the Constitution which guarantees life, liberty, and the pursuit of happiness to all of us	1	Convergence	Christianity and Hinduism
6-25-2004a	Brownback	Mr. President, our Nation cannot be the “shining city upon the hill” without the respect and recognition of the inalienable personhood of every American from the moment of conception until natural death.	2	Convergence	Christianity and Hinduism
6-25-2004a	Brownback	Embryo, fetus, infant, child, and adult are categories of human development, and they are all human life. Whether one is physically healthy or ill, emotionally healthy or ill, these are categories of human beings, and thus deserve protection. We should heed the words of President Reagan. All human life, no matter how it is categorized, should be esteemed and valued.	3	Convergence	Christianity and Hinduism
6-25-2004a	Brownback	When President Reagan said, and those of us in the pro-life movement say, that human life begins at conception, we are speaking about biology, not ideology or belief.	3	Convergence	Christianity and Hinduism
6-25-2004a	Brownback	Science tells us that the unborn child, from the moment of conception, is a human life.	4	Convergence	Christianity and Hinduism
6-25-2004a	Brownback	To deny that a human embryo is a human life is to disregard what science tells us. It is to live willfully in ignorance.	4	Convergence	Christianity and Hinduism
5-24-2005	Smith	Human embryos are human lives at their most vulnerable beginning stages, and they deserve respect.	14	Convergence	Christianity and Hinduism
7-11-2001b	Harman	As many anti-choice proponents have courageously noted, stem cell research is pro-life. It will save lives, not take them.	1	Convergence	Christianity and Judaism
2-27-2003	Nadler	Muslim groups, Mormons, some mainline Protestant denominations including the United Church of Christ and the Presbyterian Church (USA) support stem cell research. It is wrong to cause so much suffering in the name of protecting the sanctity of human life. It is especially wrong to use the criminal code to impose that narrowly held view on the innocent and the vulnerable.	13	Convergence	Islam, Mormonism, and Christianity



Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
2-27-2003	Nadler	As the Union of Orthodox Jewish Congregations and the Rabbinical Council of America put it in a letter to President Bush: "The potential to save and heal human lives is an integral part of valuing human life from the traditional Jewish perspective. Moreover, our rabbinic authorities inform us that an isolated fertilized egg does not enjoy the full status of personhood and its attendant protections. Thus, if embryonic stem cell research can help us preserve and heal humans with greater success and does not require or encourage the destruction of life in the process, it ought to be pursued.	13	Convergence	Judaism
5-24-2005	Pelosi	The Union of Orthodox Jewish Congregations of America says that traditional Jewish perspective emphasizes the potential to save and heal human lives is an integral part of valuing human life.	18	Convergence	Judaism
7-11-2001a	McDermott	History is replete with the examples of fundamentalist religious leaders issuing scientific decisions based on absolutely no evidence.	1	Divergence	
7-11-2001a	McDermott	The Bush administration is unfortunately not committed to research that would hasten medical discoveries, but rather, to hold science hostage to the Catholic vote.	1	Divergence	
7-11-2001b	Wu	Just as no theocracy can prevent the planets from moving, no theocracy can prevent stem cell research from going on. The only choice is whether we choose to be relevant to science.	2	Divergence	
7-17-2001	Ramstad	The President and Members need to be clear, Mr. Speaker, that abortion politics should not enter into this decision and certainly should not influence this critical decision.	1	Divergence	
7-18-2001	Frist	I, indeed, am pro-life. I oppose abortion. My voting record on the floor of this body is consistent with that. Those beliefs are based on the very strongly held spiritual beliefs that I have. I conclude that embryonic stem cell research and adult stem cell research should be federally funded within a carefully regulated, fully transparent, fully accountable framework that ensures the highest level of respect for the moral significance of the human embryo, the moral significance of the human blastocyst.	1	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-27-2001a	Stearns	While religious viewpoints can certainly play a role in this debate, let us put that aside for the moment and approach this subject from a purely historical scientific perspective. Throughout history, scientific research has produced substantial social benefits. It has also posed some disturbing ethical questions. Indeed, public attention was first drawn to questions about reported abuses of human subjects in horrifying biomedical experiments during World War II.	1	Divergence	
7-31-2001	Lofgren	Well, they have the right to disagree, but nobody will force them to accept the cures that science may yield. If your religious beliefs will not let you accept a cure for your child's cancer, so be it. But do not expect the rest of America to let their loved ones suffer without cure. Our job in Congress is not to pick the most restrictive religious view of science and then impose that view upon Federal law. We live in a Democracy, not a Theocracy	4	Divergence	
7-31-2001	Greenwood	I am not prepared as a politician to stand on the floor of the House and say, I have a philosophical reason, probably stemmed in my religion, that makes me say, you cannot go there, science, because it violates my religious belief.	6	Divergence	
7-31-2001	McDermott	Now, here we are making a decision like we were the house of cardinals on a religious issue when, in fact, scientists are struggling to find out how human beings actually work. We have mixed stem cells together with cloning all to confuse people. Everybody on this floor knows that the best way to stop something is to confuse people, and we have had confusion on this issue because basically people want it to be a value-laden issue that attracts one group of voters against others. That is all this is about, all this confusion.	7	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-31-2001	Greenwood	This is not a question about who has values and who stands for human life and who does not. It is a very legitimate and important and historic debate about how it is that we are able to use the DNA that God put into our own bodies, use the brain that God gave us to think creatively, and to employ this research to save the lives of men, women and children in this country and throughout the world and to rescue them from terribly debilitating and life-shortening diseases.	17	Divergence	
7-31-2001	Greenwood	I, believe that ensoulment occurs when a somatic cell taken from someone's skin divides in a petri dish, and for those who want to make that leap of faith, or leap of whatever it is, belief, they are welcome to do that. But to put into the statutes of the Federal Government a prohibition against using the state of the art research that is wonderfully brilliant, fine and inspired, and noble researchers are trying to employ in the laboratory for the very purpose of saving the lives of people, to put into law a Federal ban against that, I think, is immoral. I think it is wrong, and we should not do it.	17	Divergence	
2-27-2003	McGovern	We talk a lot about morality in this body. For the life of me, I cannot see how it is moral to look into the eyes of someone suffering from Alzheimer's or Parkinson's and say, we are going to stand in the way of something that has the potential to save your life, or to tell them that even if a breakthrough treatment is available in Europe or elsewhere, they are not allowed to have it.	2	Divergence	
2-27-2003	Lofgren	This country reflects the diverse religious beliefs found all over the world. Some, like the authors of this bill, believe that all cloning is wrong. Others believe that research cloning should be allowed. These are all legitimate views, but I think it is wrong to use the political power of one group to criminalize the beliefs of another.	12	Divergence	
2-27-2003	Lofgren	This debate really boils down to one question: Should an embryonic stem cell with no central nervous system, no chance of developing into a fetus have the same rights as a child suffering from juvenile diabetes? I do not think so .I urge you not to rob sick Americans of their hope for a cure.	12-13	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
2-27-2003	Nadler	People are certainly entitled to their religious beliefs, but they are not entitled to inflict suffering on the sick and death on the ill and enforce the imposition of their religious beliefs on others using \$1 million fines and 10-year prison sentences. IN fact, there are many other religious perspectives that disagree with the religious perspective that is the only justification for this bill.	13	Divergence	
2-27-2003	Nadler	The same people who oppose therapeutic cloning oppose the use of embryonic stem cells for the same reason: their religious view that the several-celled embryo from which the embryonic stem cells are derived is a human being. They are entitled to their belief. They are not entitled to impose that religious belief on the entire country at the cost of who-knows-how-many lives.	13	Divergence	
2-27-2003	Nadler	It is immorally arrogant, immorally arrogant to think that only one religious view is valid or moral and that one has the right to use political power to impose that religious view on the rest of the American people who may hold different religious views.	13-14	Divergence	
2-27-2003	Forbes	While it is imperative that we as a Nation and as a people of faith proceed with caution, it is also important that we do what we can to alleviate the suffering of others. We believe that to ban this potentially life-saving research would be a mistake. I think it is important that we recognize the diversity of religious viewpoints on when life begins and not impose just one viewpoint on the country.	15	Divergence	
2-27-2003	Jackson-Lee	This bill is a misplaced application of religious doctrine, imposing a narrowly held view of science and law on America.	20	Divergence	
2-27-2003	Majette	Like the Roman Catholic Church in Galileo's time, I am scared. I am afraid of where cloning research may lead. I am afraid of its applicability in the wrong hands. But I refuse to be apart of the heresy trial today...My faith is strong and, perhaps, just as Galileo's research is not described by religious scholars as "opening up new windows upon the wonders of God's creation," this research may one day be universally acclaimed—both for its ability to cure diseases as well as the insight it lends us to God's creation.	21	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
2-27-2003	Lofgren	This country is democracy; it is not a theocracy. I understand that some Members of this House have religious beliefs that are guiding them. My advice to them would be, if you object to the cures that are developed using this technology of therapeutic cloning, fine, do not use the cure. But do not try and deny other Americans cures to deadly diseases because of your own religious beliefs. That is simply an improper role for Congress to take.	41	Divergence	
12-8-2003	Stark	The Administration, with the backing of the anti-abortion movement, and several predominantly Catholic countries, is strongly lobbying Catholic countries, is strongly lobbying members of the United Nations General Assembly to vote for a resolution to enact a worldwide ban on therapeutic cloning. The Administration was not satisfied with their successful effort to cripple stem cell research in this country. Now, they want to use their considerable resources to destroy this promising research field throughout all United Nations member countries. And who will suffer if this effort is successful? People of all races, creeds, religions who suffer conditions as varied as Alzheimer's disease, Parkinson's disease, diabetes, chronic heart disease and spinal injuries. These are the individuals who have the most to lose if therapeutic cloning is banned.	1	Divergence	
10-11-2004	Durbin	Some want this to be a debate on religion. There are some, by religious belief, who do not endorse embryonic stem cell research. We better take care if that is going to be the standard. We could be walking into a very dangerous area. There are some, by religious belief, who don't believe in blood transfusions. So should we say at this point blood transfusions are immoral for all Americans because one religion or another does not agree they are necessary to prolong life? There are some, by religious belief, who believe medical doctors should not be turned to but the power of prayer should cure your illness. Should we take that as a moral position for America and say that we cannot encourage medicine in America? I think not. So why in this area, when it comes to medical research, are we going to close the doors that the Bush administration has to the hopes for Christopher Reeve and many like him?	4	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
5-24-2005	Stark	If you believe it is morally superior to discard a single cell in a freezer rather than to use it to help millions of Americans with Parkinson's, Alzheimer's, and diabetes, and you are asked to donate an embryo, then by all means refuse to do so. But do not tell my constituents that we cannot alleviate their suffering because it might offend modern-day Pharisees.	16	Divergence	
5-24-2005	Pelosi	To some, this debate may seem like a struggle between faith and science. While I have the utmost respect, and the gentlemen know I do, for those who oppose this bill on moral grounds, I believe faith and science have at least one thing in common: both are searches for truth. America has room for both faith and science. Indeed, with the great potential for medical research, science has the power to answer the prayers of America's families. I believe strongly in the power of prayer, but part of that prayer is for a cure, and science can provide that. Many religious leaders endorse the Castle/DeGette bill because of their respect for life and because they believe science, within the bounds of ethics and religious beliefs, can save lives and improve its quality. Groups as diverse as the United Church of Christ, the Union for Reform Judaism, the United Methodist Church, the Episcopal Church, and the Union of Orthodox Jewish Congregations of America support this bill.	18	Divergence	
5-24-2005	Pelosi	It is our duty to bring hope to the sick and disabled, not to bind the hands of those who can bring them hope. I believe God guided our researchers to discover the stem cells power to heal. This bill will enable science to live up to its potential to again answer the prayers of America's families.	18	Divergence	
5-24-2005	Stupak	Sometimes ideology can box you in and cause you to make wrong and harmful decisions. I think it is time we recognize the Dark Ages are over Galileo and Copernicus have been proven right. The world is in fact round. The earth does revolve around the sun. I believe God gave us intellect to differentiate between imprisoning dogma and sound ethical science, which is what we must do here today. I want history to look at this Congress and say that in the face of age-old tension between religion and science, the Members here allowed critical scientific research to advance with respecting imp. ethical questions that surrounded it.	21	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
5-24-2005	Nadler	I understand and respect the faith of all of my colleagues. It is a sincere faith that reveres life. I ask them to accord that same respect to the faiths of others. Unfortunately, words have sometimes been used carelessly, and these words sometimes denigrate the faith of others. When the teaching of a faith are described as “a culture of death” because they hold that the potential to save and heal human lives is an integral part of valuing human life, that faith and its adherence are being slandered. How dare anyone slander the faiths of many Americas as “a culture of death.” God does not speak to one faith alone. We hear lots of speeches about respecting people of faith and the need to bring faith into the public square. The people who make those speeches should respect all faiths. We should vote our consciences, but we should not denigrate the faith and consciences of the millions of Americans who seek to preserve life and end suffering and who believe that embryonic stem cell research can save lives and therefore embodies the highest morality.	22-23	Divergence	
5-25-2005	Capuano	I do not intend to imply that nothing is happening in America. To the contrary, many scientists, many of them in my own district, are working feverishly to find new cures for various diseases. I understand that some Americans object to embryonic stem cell research. However, many thoughtful, principled persons from all of our Nation’s religious and ethical traditions support embryonic stem cell research. Self-appointed moralists should not jeopardize the health of our loved ones and the economic future of our country.	2	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-17-2006	Johnson	Choosing research over incineration is a moral choice. I have prayed about this issue, and my deeply held religious faith tells me that respect for human life, respect for God's children, requires this life-saving research to proceed rather than the continued incineration of frozen excess embryo cells that are sitting in fertility clinics classified as medical waste. Let there be no mistake: there are three bills being considered by the Senate this week. But unless a Senator votes for H.R. 810, the Stem Cell Research Enhancement Act, he or she will not have voted for this meaningful life-giving research. I urge my colleagues to join me in affirming that respect—that respect for life—by voting for the Stem Cell Research Enhancement Act. Choose research and life over incineration.	11	Divergence	
7-17-2006	Kennedy	In the Bible, the Book of Proverbs tells us: Hope deferred makes the heart sick. And today hearts are sick almost to the breaking point because, for the last 5 years, the Bush administration has shut down the stem cell research program begun at the National Institutes of Health and imposed the arbitrary restrictions on this lifesaving research. Hope soared anew a year ago when the House of Representatives set aside partisan differences and courageously approved legislation to end those restrictions and to give our scientists the tools they need to make the progress in the fight against disease. The vote in the House affirmed that embryonic stem cells can promote a true culture of life by enabling fuller, longer lives for millions of our citizens. The House voted for hope, for progress, and for life.	35	Divergence	



Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-19-2006	DeGette	My colleagues opposed to this bill have argued this on moral and religious grounds. They are absolutely right. Regardless of whether one practices Christianity, Judaism, or Islam, every religion in the world tells us to alleviate human suffering. History has showed, however, that even the most devout have often strayed from this common religious and moral duty. According to the New Testament, religious leaders in Biblical times attacked Jesus for healing the sick on the Sabbath. History has apparently repeated itself, as we have religious leaders today casting similar judgments on the healers of our time. Just like the sick in Biblical times, American families suffering from incurable diseases do not have time for the Federal Government to restrict those who could heal them. To alleviate human suffering, that is the purpose of this bill, and that should be our purpose today. Let us override this veto	5	Divergence	
7-19-2006	Pelosi	The opponents of this legislation believe that this is a struggle between faith and science. I believe that faith and science have at least one thing in common; Both are searches for truth. America has room for both faith and science, and thank God for that.	11	Divergence	
4-11-2007	Smith	I have heard some refer to embryonic stem cell research as a conflict between science and religion. I do not believe that is the case. One of the greatest qualities and aspects of life in the United States is our religious pluralism. It is something we see an absence of, tragically, in too many places around the world. We do not serve the public well by taking the narrowest theological position and trying to impose it on public policy. The American tradition is open enough to include other considerations of ethical ideas, Scriptural interpretations, and scientific hope.	14	Divergence	

Table 4.2. Continued

Record Code	Speaker	Unit	Pg. No	Con/Div	Religion
7-19-2009	Cleaver	Behind all of the opposition to stem cell research, there seems to be a subliminal religious tone. I am a fundamentalist in that I believe that the Holy Bible is the inspired and interminable word of God. But I am baffled by my fellow fundamentalists who seem to be utterly opposed to and terror-stricken by the advancement of science, including stem cell research. The propagation of knowledge by some in our faith seems to be a foreboding foray toward undermining or diminishing the glory of the Creator. However, the opposite is true. When the human intellect makes strides that sets the world agog, it is God from whom all knowledge stems who is honored. And keep in mind that scientific advancement is not an enemy of faith, but rather a bold statement that God is still active in this universe. Mr. Speaker, I conclude by just saying that it is a great testament to God if we are able to advance science. It means that His power is supreme.	10	Divergence	

### *Converging Arguments*

Language convergence was defined as common labels used by participants in finding meaning (Dougherty et al., 2009). Based on this definition, 62.8% (n=59) of the arguments identified were language convergent with the official stances of a religious group. Of the converging arguments, a total of 96.6% (n=57) were categorized as being language convergent with Christian viewpoints, 15.2% (n=9) with Hindu doctrine, 5% (n=3) with Judaism, and 1.7% (n=1) with Islamic perspectives. The percentages total over 100% due to the overlap between Christianity, Hinduism, Judaism, and Islam in some of the arguments. In other words, the congressmen used language that mirrored the stances of more than one religious tradition.

### *Christianity*

Most Christians have chosen to identify with one denomination, whether it be Roman Catholic, Orthodox, Protestant, or some other body of believers. However, the central tenants of the Christian faith remain the same, regardless of the affiliation. Christianity teaches there is only one God and that God revealed himself to humanity and became incarnate in the person of Jesus. The New Testament portion of the Bible, the sacred text of Christians, confesses that Jesus is the Christ and the Son of God (Beverley, 2005). Followers of Christianity also believe that the Messiah is the bearer of God's grace and a sacrificial lamb whose death absolves sin (Gellman and Hartman, 2002). Additionally, Christians believe that human beings are created in and reflect the image of God, and that life begins at conception. Therefore, only God can give and take away life. These beliefs (common to all groups) are central to shaping views about ESCR.

Christianity is the dominant religious group within the United States (approximately 74.3% (Pew Forum on Religion and Public Life, 2009)). Therefore, it is not surprising that the dominant perspective emerging from the data was that of Christianity. The official stances, presented in Table 1, of the American Baptists in the USA, Southern Baptist Convention, Episcopal Church, Evangelical Lutheran Church in America, Presbyterian Church, United Church of Christ, United Methodist Church, and the Roman Catholic Church all fall under the categorization of the Christian faith (Pew Forum on Religion and Public Life, 2009).

The political arguments covered a wide spectrum of beliefs from life beginning at conception to the destruction of embryonic stem cells being immoral. One example of these arguments is that of Congressman Robert Smith of New Hampshire (August 1, 2002) when discussing the Brownback-Landrieu bill (a bill that bans all human cloning, both reproductive and therapeutic (form of cloning used in ESCR)):

If we allow the creation of embryos solely for this destruction [to be used in ESCR], we will effectively be discriminating against an entire class of human beings by saying to them: I will destroy your life for the sake of someone else's or my own. If we accept the notion that some lives have more value than others, if we allow scientists or doctors or politicians to play God and determine which lives have value and which do not, then we have demolished the very foundation upon which we have built our freedom. Human embryos are not machines to be used for spare parts, all in the name of 'medical progress.' We cannot view human life as exploitable natural resources ripe for the harvest (p. 1).

Another example comes from Representative Mike Pence of Indiana after Pope John Paul II spoke with President Bush about ESCR (July 23, 2001):

Madam Speaker, as the debate over using Federal funds to support embryonic stem cell research goes forward, I would urge my colleagues in this Chamber to consider the clear words of Pope John Paul III spoken to our President today, who said in Rome, 'experience is already showing how a tragic coarsening of consciences accompanies the assault on innocent life in the womb, leading to the accommodation and acquiescence in the face of other related evils such as

euthanasia, infanticide, and, most recently, proposals for the creation for research purposes of human embryos, destined to destruction in the process.’ The Pope went on to say, ‘a free and virtuous society which America aspires to be must reject practices that devalue and violate human life at any stage from conception until natural death.’ May we in this Chamber, Madam Speaker and our President, heed the words of this gentle servant of God (p. 2).

All of the arguments presented that demonstrated language convergence with Christianity reflect the common Christian values of respect for human life (from the moment of conception) and adherence to God’s word.

### ***Hinduism***

Hinduism is grounded in the concepts of *dharma* (religion), *moksha* (liberation), *karma* (action), and *samsara* (cycle of rebirth). Within the context of ESCR, however, the most important concept is that of *samsara*. For many Hindus, the cycle of rebirth means that life has no beginning and no end. Instead, it is a continuous cycle (Renard, 1999). Therefore, Hindus believe in the sanctity of human life. While there is no official position of the Hindu faith on ESCR, the belief in life beginning at conception has led a number of Hindu followers not to support ESCR (Pew Forum on Religion and Public Life, 2009). Consequently, for analysis purposes, arguments that illustrated a belief in the sanctity of human life were categorized as being convergent with Hinduism.

Followers of Hindu doctrine comprise approximately 0.4% of the U.S. population (Pew Forum on Religion and Public Life, 2009). However, the researcher observed language convergence with this faith only in matters of life beginning at

conception, which is also a common belief of Christianity. Therefore, all arguments that demonstrate language convergence with Hinduism are also convergent with Christianity. There are 9 arguments (15.2%) within this category. An example of an argument that converges with elements of both Christianity and Hinduism is that of Senator Sam Brownback of Kansas when discussing the Reagan Cultural Doctrine (June 25, 2004) [Nancy Reagan has become a strong supporter of ESCR, however a number of politicians argue that because Ronald Reagan was pro-life, he would be opposed to the science]:

Embryo, fetus, infant, child, and adult are categories of human development, and they are all human life. Whether one is physically healthy or ill, emotionally healthy or ill, these are categories of human beings, and thus deserve protection. All human life, no matter how it is categorized, should be esteemed and valued (p. 3).

### ***Judaism***

There are three dominant religious groups within Judaism: Orthodox, Reformed and Conservative. Orthodox Jews emphasize the importance of the Torah, the sacred text of Jews, and mystical writings. Reform Jews do not believe that either the Torah or the Talmud (a record of rabbinic discussions pertaining to Jewish law, ethics, customs, and history) is the explicit revelation of God. However, they do believe that they have the right and duty to decide which laws apply to today's world. Conservative Judaism is the middle ground between Orthodoxy and Reform Judaism (Beverley, 2005).

There are 13 articles of faith central to Judaism. The first four concern the role of God (he exists, is unique, incorporeal, and eternal). The fifth is that prayer is only to God. The sixth and seventh are about the prophets (they spoke truth and Moses was the greatest). The eighth and ninth propose that the written and oral Torah were given to Moses and there will be no other Torah. The tenth and eleventh relate to actions (God knows the thoughts and deeds of humans and God will reward the good and punish the wicked). The twelfth declares the Messiah will come. The last article refers to the dead being resurrected in God (Religion Facts, 2009).

In relation to ESCR, Jewish tradition uses both theology and law to discern God's will. Jews believe that bodies belong to God; therefore, it is a duty to preserve human life and health (*pikuah nefesh*) (Dorff, 2003). Jewish tradition also accepts both natural and artificial means to overcome illness. Consequently, "all major Jewish denominations—including Reformed, Conservative, and Orthodox movements—support both embryonic and adult stem cell research as long as it is for medical and therapeutic purposes" (Pew Forum on Religion and Public Life, 2009, p. 1).

Three arguments (5%) from the Senate and House floors illustrated language convergence with the Jewish perspective. For example, according to Representative Jerrold Nadler of New York (February 27, 2003) during discussions about House Resolution 105: Human Cloning Prohibition Act of 2003:

As the Union of Orthodox Jewish Congregations and the Rabbinical Council of America put it in a letter to President Bush: 'The potential to save human lives is an integral part of valuing human life from the traditional Jewish perspective.

Moreover, our rabbinic authorities inform us that an isolated fertilized egg does not enjoy the full status of personhood and its attendant protections. Thus, if embryonic stem cell research can help us preserve and heal humans with greater success and does not require or encourage the destruction of life in the process, it ought to be pursued' (p. 13).

### ***Islam***

There are five central beliefs of Islam: *shahadah*, *salat*, *zakat*, *sawm*, and *hajj*. *Shahadah* is the confession of faith. Muslims must believe that there is no other God but Allah, and that Muhammad is His messenger. *Salat* is prayer. All Muslims are to pray five times a day looking to the east (the direction of Mecca, Islam's holy land). *Zakat* is tithing. Muslims must give 2.5% of their total wealth to the poor, annually. *Sawm* is fasting. During the holy month of Ramadan, Muslims are to abstain from food, water, and sex from sunrise to sunset. *Hajj* is the pilgrimage. When possible, Muslims are expected to travel to Mecca at least once in their lifetimes to engage in rituals of prayer (Beverley, 2005).

While there is no explicit Islamic ruling on the issue of ESCR, some Muslim leaders support ESCR while others argue the termination of an embryo at any stage of pregnancy is morally impermissible (Pew Forum on Religion and Public Life, 2009). Therefore, identifying language convergence with Islam is difficult unless Islam is specifically referenced in the argument. There was only one argument (1.7% ) that mentioned Islam. This was offered by Representative Jerrold Nadler of New York when



arguing against House Resolution 105: Human Cloning Prohibition Act of 2003

(February 27, 2003):

Muslim groups, Mormons, some mainline Protestant denominations including the United Church of Christ and the Presbyterian Church (USA) support stem cell research [ESCR]. It is wrong to cause so much suffering in the name of protecting the sanctity of human life. It is especially wrong to use the criminal code to impose that narrowly held view on the innocent and the vulnerable (p. 13).

### ***Diverging Arguments***

According to Dougherty et al. (2009), meaning divergence is defined as: (a) the use of different words to clearly articulate the notion that different meanings are at play; and (b) the use of a single word to represent different meanings. Within the political discourse analyzed in this study, 37.2% (n=35) of the arguments exhibited one of these two modes of meaning divergence with religious positions on ESCR.

The first mode of meaning divergence is the use of different words to clearly articulate the notion that different meanings are at play. An example of this is from Senator Jerold Nadler of New York (May 24, 2005) when arguing for support of House Resolution 810: Stem Cell Research Enhancement Act of 2005:

Mr. Speaker, the debate on stem cell research challenges all of us to think carefully about the value we place on human life. Many of us turn to our faith traditions for guidance and wisdom. None of us has the right to legislate our religious beliefs and impose them on others. But as Members look to the

teachings of their faiths for guidance, I ask them to remember that not all faiths hold that stem cell research is the enemy of life (p. 22).

In this example, Senator Nadler uses the word “faiths” instead of “faith” to demonstrate that there are multiple faith traditions in existence and that various meanings are present.

The second mode of meaning divergence is the use of a single word to represent different meanings. An example of an argument that demonstrated this mode is the one offered by Senator Bill Frist of Tennessee (July 18, 2001) when arguing for federal funding of ESCR:

As policymakers, we will be injecting our own feelings and our own beliefs into this debate as we go forward. Therefore, I wish to make it clear to my colleagues that from my perspective I do value life and give moral significance to the embryo and to the blastocyst and to that full continuum. I, indeed, am pro-life. I oppose abortion. My voting record on the floor of this body is consistent with that...After grappling with the issue—scientifically, ethically, and morally—I believe that both embryonic and adult stem cell research should be federally funded within a carefully regulated, fully transparent framework that ensures the highest level of respect for the moral significance of the human embryo (p. 1-6).

In this example, Senator Frist uses rhetoric similar to the belief in the sanctity of human life which is a common teaching of Christianity, Hinduism, and Islam. However, Senator Frist utilizes that commonality of valuing life through the words “moral significance” to explicate his point: in order to insure human life is respected, federal funding and regulations have to be put into place.

## DISCUSSION

Findings from this study suggest that religious rhetoric has a substantial influence on political discourse regarding embryonic stem cell research. From the arguments extracted in this study, more than half (63%) were colored by religious rhetoric. This finding suggests that religion plays a major role in U.S. political discourse. Such religious influence could stem from a number of factors, including the cultural norms of a religion (Mead, 2006), the influence of religious leaders (Berggren and Rae, 2006; Berggren, 2005), or the religious values of a constituency (Cann, 2009; Green and Guth, 1991). While religion has historically been involved in critiques of biomedical science and technology, the discussions surrounding ESCR has illustrated a new level of religious engagement, however (Durst, 2002). This religious engagement prompted the National Bioethics Advisory Commission (NBAC) (1997) to issue the following statement:

Religious traditions influence and shape the moral views of many U.S. citizens, and religious teachings over the centuries have provided an important source of ideas and inspiration...[however] in a pluralistic society particular religious views cannot be determinative for public policy decisions that bind everyone (p. 7).

The statement by the NBAC recognizes the influence of religious beliefs on the decision-making processes of many individuals, however it warns that these religious beliefs should not have such an influence on federal policies because of the multitude of beliefs of the American people.

Approximately 63% of the arguments identified were language convergent with an official position of a religious denomination regarding ESCR. Of these arguments, 96.6% mirrored teachings of Christianity. There are several reasons why this may have occurred. The first is that 74.3% of the U.S. population identifies itself as Christian. Additionally, the latest statistics on the new 111<sup>th</sup> Congress finds that Protestant congress (and house) representatives account for 54.7% (n=292), Catholics 30% (n=161), Jews 8.4% (n=45), Mormons 2.6% (n=14), Orthodox (n=7), Other Christian (n=3), Other Faiths (n=3), Muslims 0.4% (n=2), and Buddhists 0.4% (n=2) (Pew Forum of Religion and Public Life, 2009). Therefore, it is not surprising there would be more language convergence with Christianity.

Thirty-seven percent of the arguments demonstrated meaning divergence with a religious position on ESCR. These meaning divergent arguments met both of the definitions outlined by Dougherty et al., (2009). In other words, divergence was found at both the level of different language being utilized and different meanings being attributed to the same words. The religious landscape of the United States is diverse, including a growing number of Atheists and Agnostics. Therefore, the recognition of different ideologies is necessary in order to provide policies that are equitable. In choosing to use rhetoric that is meaning divergent with official positions of religious denominations on ESCR, the senators are giving voice to the multiple perspectives.

The design and methods of this study have several strengths. First, the examination of congressional records allowed for political discourse to be analyzed systematically. Additionally, the use of grounded theory enabled a structured and

systematic way for analyzing the data. However, a major weakness of the study is that the political discourse analyzed was restricted to transcripts. Video and/or audio recordings of the discussions could add another layer of understanding and examination because then tone, intonation, speaking patterns, and nonverbal communication could be analyzed. Therefore, future studies should investigate both the transcripts and video and/or audio recordings.

The present study presents an opportunity for health educators to gain a deeper understanding of public health genomics. This understanding is important to the advancement of the field because the Centers for Disease Control and Prevention (2009) advises health educators to establish genomic competencies to 1) explain health-related information to lay communities; 2) identify factors influencing the lay public's learning of genomics; 3) distinguish genomic education from genetic counseling; 4) facilitate genomic education for stakeholders; 5) utilize social marketing strategies to develop genomics-related health education services; 6) critically analyze current and future community genomic education needs; and 7) advocate genomic education and/or add genomic components into existing programs.

Additionally, the present study allows for a deeper understanding of the role of religious beliefs in shaping perceptions and policies. This permits health educators, bioethics scholars, and political scientists alike a framework to direct research on the decision making processes of those that are guided by their religious doctrine (Goodson, 2006; Chen, Kwok, and Goodson, 2008). ESCR and the desire for more biomedical discoveries will continue to develop because of our need to save lives and relieve human

suffering. Therefore, gaining a more informed perspective of the role of religious beliefs on U.S. federal policies regarding ESCR is paramount.

## CHAPTER V

### CONCLUSIONS

The overall purpose of this research report was to answer the overarching research question: *how do religious beliefs influence people's perceptions of, and institutional (government and/or other) policies regulating embryonic stem cell research (ESCR)?* More specifically, this report sought to address the following gaps present in the literature: Do religion-related factors influence the intentions of individuals to seek genetic testing? How do individuals' religious beliefs influence perceptions of ESCR? How does religious rhetoric influence political discourse regarding ESCR?

In order to examine these gaps in the scientific literature, the author first conducted a systematic literature review of articles that were (a) published in a peer-reviewed, English language journal; and (b) empirically examined individuals' religious beliefs and perceptions/utilization of genetic technologies/services. Based on the findings from the review, there was an equal balance between studies that found that religion was a factor positively affecting intention to submit to genetic testing and those that illustrated a negative association (see Chapter II). Additionally, the small sample of available studies suggested the need for more empirical research and their methodological quality revealed the need for more studies that implement theory and clear definitions of religion and religious beliefs either operationally or conceptually.

Next, the author employed a qualitative, naturalistic inquiry approach to examine the perceptions about ESCR of a sample of undergraduate and graduate students from multiple racial/ethnic and religious backgrounds (see Chapter III). The majority of

participants believed that ESCR should be conducted and federally funded in the United States, regardless of their religious beliefs. Additionally, most of the study's participants were able to cite both potential benefits and potential risks to conducting ESCR whether or not they were supporters. However, only a small minority of participants identified membership with a racial/ethnic group as an influence on their perceptions.

The author also explored the influence of religious rhetoric on political discourse regarding ESCR, through a qualitative inquiry (using grounded theory principles). In the study, convergence and divergence between the official stances of major religious groups in the United States and congressional records of any discussions and voting that occurred on the U.S. Senate and House floors during the time period of January 1, 1999 to March 10, 2009 were examined (see Chapter III). Findings from this study suggested that religious rhetoric has a substantial influence on political rhetoric regarding ESCR. From the arguments extracted, more than half were colored by religious rhetoric. Additionally, the majority of arguments that demonstrated language convergence with religious denomination were language convergent with Christianity. Meaning divergence was also found within the sample at both the level of different language being utilized and different meanings being attributed to the same words.

This report is a valuable asset to the literature due to its multifaceted approach to analyzing the influence of religious beliefs on perceptions and policies regarding ESCR. Public health genomics has become a vital component within the field of health education. Therefore, health educators must exhibit several competencies related to genomics (CDC, 2005). Understanding the perceptions/potential barriers regarding



genetic technology that exists will allow health educators the opportunity to tailor programming and campaigns that addresses the concerns of their participants.

Additionally, this report presents health educators with a framework to direct future research on religious beliefs and genomics. Future studies should further explicate this relationship between religion and rhetoric/perceptions about genetic technologies in order to develop theories and inform policy about ESCR.

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## APPENDIX A

### TEXAS A&M UNIVERSITY DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE

1186 TAMU, General Services Complex  
College Station, TX 77843-1186  
750 Agronomy Road, #3500

979.458.1467  
FAX 979.862.3176  
<http://researchcompliance.tamu.edu>

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Institutional Biosafety Committee   Institutional Animal Care and Use Committee   Institutional Review Board

---

**DATE:** 25-Sep-2008

**TO:** ROBINSON, TOMEKA M

**FROM:** Office of Research Compliance  
Institutional Review Board

**SUBJECT:** Initial Review

---

**Protocol Number:** 2008-0515

**Title:** Religious and Genomics/Genetics Beliefs: An Exploratory Study

**Review Category:** Expedited

**Approval Period:** 25-Sep-2008 **To** 24-Sep-2009

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#### **Approval determination was based on the following Code of Federal Regulations:**

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

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(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

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#### **Provisions:**

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This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

**TEXAS A&M UNIVERSITY**  
**DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE**  
 1186 TAMU, General Services Complex  
 College Station, TX 77843-1186  
 750 Agronomy Road, #3500

979.458.1467  
 FAX 979.862.3176  
<http://researchcompliance.tamu.edu>

Human Subjects Protection Program

Institutional Review Board

**DATE:** 22-Jul-2009

**TO:** ROBINSON, TOMEKA M

**FROM:** Office of Research Compliance  
Institutional Review Board

**SUBJECT:** Amendment

**Protocol Number:** 2008-0515

**Title:** Religious and Genomics/Genetics Beliefs: An Exploratory Study

**Review Category:** Expedited

**Approval Period:** 22-Jul-2009 **To** 24-Sep-2009

**Approval determination was based on the following Code of Federal Regulations:**

45 CFR 46.110(b)(2) - Minor changes in previously approved research during the period of (one year or less) for which approval is authorized.

**Provisions:** Approval to recruit via posted flyer granted.

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.



3. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.
5. **Informed Consent:** Information must be presented to enable persons to voluntarily decide whether or not to participate in the research project.

This electronic document provides notification of the review results by the Institutional Review Board.

**TEXAS A&M UNIVERSITY**  
**DIVISION OF RESEARCH AND GRADUATE STUDIES - OFFICE OF RESEARCH COMPLIANCE**  
 1186 TAMU, General Services Complex  
 College Station, TX 77843-1186  
 750 Agronomy Road, #3500

979.458.1467  
 FAX 979.862.3176  
<http://researchcompliance.tamu.edu>

Human Subjects Protection Program

Institutional Review Board

**DATE:** 01-Sep-2009

**TO:** ROBINSON, TOMEKA M

**FROM:** Office of Research Compliance  
Institutional Review Board

**SUBJECT:** Request for Continuation

**Protocol Number:** 2008-0515

**Title:** Religious and Genomics/Genetics Beliefs: An Exploratory Study

**Review Category:** Expedited

**Approval Period:** 25-Sep-2009 To 24-Sep-2010

**Approval determination was based on the following Code of Federal Regulations:**

45 CFR 46.110(b)(1) - Some or all of the research appearing on the list and found by the reviewer(s) to involve no more than minimal risk.

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(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation or quality assurance methodologies.

(Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b) (3). This listing refers only to research that is not exempt.)

**Provisions:** Data analysis only.

This research project has been approved for one (1) year. As principal investigator, you assume the following responsibilities

1. **Continuing Review:** The protocol must be renewed each year in order to continue with the research project. A Continuing Review along with required documents must be submitted 30 days before the end of the approval period. Failure to do so may result in processing delays and/or non-renewal.
2. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
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## APPENDIX B

# Study Participants Needed

Are you Christian? Jewish? Muslim?  
Hindu? Buddhist? Or Atheist/Agnostic? If  
you answered yes to any of the above  
questions, then I want to talk to you!

I am conducting a study to find out how  
religious beliefs affect ideas about human  
stem cell research. I want to hear from the  
Aggie community on this issue!

If you are interested in participating or if  
you have more questions, please contact me  
at [trobinson@tamu.edu](mailto:trobinson@tamu.edu).  
Let your voice be heard!

## APPENDIX C

### Demographic Survey:

Thank you for your interest in participating in this study. Please fill out the following survey. Your answers will determine your participation within this study. If you have any questions please e-mail me at [trobinson@tamu.edu](mailto:trobinson@tamu.edu).

- 1) Are you male or female?
  - a. Male
  - b. Female
- 2) What is your age?
  - a. 17 or younger
  - b. 18-21
  - c. 22-25
  - d. 26-30
  - e. 31-40
  - f. 41-50
  - g. 51-60
  - h. 61 or older
- 3) What is the highest level of education you have completed?
  - a. High school/GED
  - b. Some college
  - c. 2-year college degree (Associates)
  - d. 4-year college degree (BA, BS)
  - e. Master's degree
  - f. Doctorate degree
- 4) What is your current marital status?
  - a. Single, never married
  - b. Married

- c. Separated
- d. Divorced
- e. Widowed

5) What is your religious affiliation?

- a. Christian, please specify \_\_\_\_\_
- b. Jewish, please specify \_\_\_\_\_
- c. Muslim, please specify \_\_\_\_\_
- d. Buddhist, please specify \_\_\_\_\_
- e. Non-religious/spiritual, please specify \_\_\_\_\_
- f. Other, please specify \_\_\_\_\_

6) What is your race? (Please circle all that apply)

- a. Caucasian
- b. African-American
- c. Hispanic
- d. American Indian
- e. Asian-American/Pacific Islander
- f. International, please specify \_\_\_\_\_
- g. Other, please specify \_\_\_\_\_

## APPENDIX D

### Religion Assessment

- 1) Do you consider yourself a religious person?
- 2) If yes, what is your religious affiliation?
- 3) What are the major values/beliefs embedded within your religious affiliation?
- 4) How closely do you follow the tenants of your chosen religion?

### Stem Cell Knowledge Assessment

- 1) When you heard the words stem cell research what images come to mind? Why?
- 2) What are the types of stem cell research?
- 3) Do you believe there are any benefits to conducting stem cell research?
- 4) Do you believe there are any risks in conducting stem cell research?
- 5) Does the government currently provide funding for embryonic stem cell research? Why or why not?
- 6) What does the idea of embryonic stem cell research mean to you? To your friends or family?

### Ethical, legal, and social issues Assessment

- 1) In your view, what are some of the major ethical, legal, and social issues of conducting stem cell research?
- 2) Do you believe that stem cell research should be legal? Why or why not?
- 3) How far do you believe researchers should take stem cell technologies? Why?
- 4) Should the government provide funding for embryonic stem cell research? Why or why not?
- 5) Should there be laws to regulate stem cell research? What governing body should provide and enforce these laws? Why?
- 6) In your opinion, do embryonic stem cells represent a human life? Why or why not?
- 7) Should frozen embryos created through in vitro fertilization be used to create stem cells? Why or why not?

### Intersection of religion and stem cell research

- 1) What do you believe is your religious group's stance on embryonic stem cell research?
- 2) How much do you agree with this stance? Why or why not?
- 3) How much, do you think, your belief system is shaped by your religious views?
- 4) How much, do you think, your belief system is shaped by your cultural views?



## **APPENDIX E**

### **Informed Consent**

Title of Research: Religious and Genomics/Genetics Beliefs: An Exploratory Study

Investigator: Tomeka Robinson, M.A. & Dr. Patricia Goodson

Before agreeing to participate in this research study, it is important that you read the following explanation of this study. This statement describes the purpose, procedures, benefits, risk, discomforts, and precautions of the program. Also, described are the alternative procedures available to you, as well as your right to withdraw from the study at any time.

#### Explanation of Procedures

This research study is designed to assess whether the religious beliefs of college students shape their attitudes toward human stem cell research. This research study will also involved purposeful sampling to ensure that there is equal representation from all racial/ethnic and religious backgrounds. The interviews will be audiotaped by the researcher and later transcribed for the purpose of data analysis. The interviews will be conducted at a setting that is mutually agreeable to the participant and the researcher.

#### Risks and Discomforts

There are no risks or discomforts that are anticipated from your participation in the study.

#### Benefits

The study will allow participants to reflect upon their personal beliefs regarding stem cell research, though reflection of their religious beliefs. Additionally, this study provides insight into the ways in which religious beliefs may influence your value systems regarding human stem cell research. Such belief systems underlie policy building and decision making regarding genomic research and services. Understanding these belief systems contribute to better policy making and thus, benefit society.

#### Alternative Treatments

Because this study does not involve specific treatments or procedures, there are no known alternative treatments to participating in this study.

#### Confidentiality

The information gathered during this study will remain confidential in a locked drawer during this project. Only the researcher and Texas A&M University IRB will have access to the study data and information. There will not be any identifying names on the tapes, and participant's names will not be available to anyone. The tapes will be destroyed at the completion of the study. The results of the research will be published in

the form of a graduate paper and may be published in a professional journal or presented at professional meetings.

Withdrawal without Prejudice

Participation in this study is voluntary; refusal to participate will involve no penalty. Each participant is free to withdraw consent and discontinue participation in this project at any time without prejudice from this institution.

Cost and/or Payment to Subject for Participation in Research

There will be no cost for participation in the research.

Questions

Any questions concerning the research project and/or in the case of injury due to the project, participants can call Dr. Patricia Goodson (faculty advisor for this project) at 979-847-8987.

Agreement

This agreement states that you have received a copy of this informed consent and you agree to participate in the study. Thanks for your participation!

Subject name (printed):

Signature of Subject:

Date:

Signature of Researcher:

Date:

## VITA

### Tomeka Michelle Robinson

Office: Department of Communication  
Mills 200  
215 Fifth Street  
Marietta, OH 45750

#### **EDUCATION:**

- |         |                          |                                |
|---------|--------------------------|--------------------------------|
| • Ph.D. | Texas A&M University     | Health Education               |
| • M.A.  | Texas A&M University     | Communication                  |
| • B.S.  | McNeese State University | Biology & Speech Communication |

#### **Selected Oral Conference Presentations**

- **Robinson, T.M.** (July, 2009). *Separation of Church & State: Convergence & Divergence of Religious Beliefs with Stem Cell Policy*. Paper accepted for presentation in the Genetic Alliance's 2009 Annual Conference, Bethesda, MD.
- **Robinson, T.M.** (May, 2007). *The Prisoner Dilemma: An Analysis of the Penal Health System*. Paper presented at the 2007 Visionary Scholars Seminar sponsored by the Center for the Study of Health Disparities, College Station, Tx.
- **Robinson, T.M.** & Kleck, C. (April, 2007). *Hate Crimes or Terrorist Acts: An Analysis of Hate Crime Reports in the State of Texas from 2003-2006*. Paper presented at the 2007 Popular Culture and American Culture Association National Conference, Boston, MA.
- Iverson, J.I. & **Robinson, T.M.** (November, 2006). *Enactment of Basho (Place) in Interviewing Relationships: Reframing Failure of Interviewers as Interviewee Enactment of Identities*. Paper presented at the 2006 National Communication Association Conference in San Antonio, TX.
- **Robinson, T.M.** (September, 2006) *Spirituality and Health: A Systematic Literature Review*. Paper presented at the 2006 Louisiana Communication Association Conference, Lake Charles, LA.
- **Robinson, T.M.** (May, 2006). *I'm just a student, my opinion doesn't count anyway: An analysis of communications training for medical students*. Paper presented at the 2006 Hawaii International Conference for Social Sciences, Honolulu, HI.

#### **Awards**

- National Association of Professional Women Inductee, 2009
- Carol Hickey Dedicated Service Award for American Forensics Association, District III, 2009
- Lifetime Member, National Scholars Honor Society, 2007